An Address

ON

THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS.

Delivered at the Technical College, Huddersfield, on Oct. 22nd, 1898,

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GENTLEMEN,—Having been called to Huddersfield on one matter concerning the public health it occurred to me that I might perhaps render a service to my native town and neighbourhood by bringing before you another question of great importance—namely, the prevention of consumption. I claim no special knowledge of the subject and shall have nothing to say which will be new to my medical friends in Huddersfield, so many of whom I see around me to my great satisfaction, and I should like to begin my lecture here by thanking heartily the members of the profession, and particularly Mr. Knaggs, for the cordial support and encouragement they have given me in this matter. You would have learnt from them in course of time how the ravages of tubercle may be stayed, but knowledge percolates slowly, and while it was being brought home to the general public many hundreds of valuable lives might be sacrificed. It is the realisation of this fact which has led to the formation of the National Society for the Prevention of Consumption and Other Forms of Tuberculosis.

You are all familiar with the prevalence of consumption. There can scarcely be a person here who has not lost some relative or friend from this disease. Statistics, therefore, are scarcely necessary, but it will perhaps bring more definitely before your minds the serious loss of life to which tuberculous disease gives rise in this neighbourhood if I quote the figures relating to it which are found in the able report of Mr. Annis, your medical officer of health, for the year 1897, and show you on an enlarged scale a diagram which he has made illustrating the proportion of deaths from all causes. You will see what an enormous preponderance consumption claims. The total number of deaths in the borough in 1897 was 1666, and of these 222, 1 in 7·5, were due to the various forms of tuberculous disease. We are, say, 800 people in this room; 80 or 100 of us will die from consumption or other effect of tuberculosis. You will all agree that if this terrible sacrifice of life is preventable it ought to be prevented. I can imagine some of you who are cynically minded, and especially such as consider themselves safe from diseases of this kind, saying, "Well, we must die from something; why not from phthisis?" If consumption only weeded out the weaklings there might be something in this view of the matter. But it is often the most gifted, the most useful, the most diligent, the most intelligent, the most amiable who are carried off in this way. Is this not so? And then it is so tedious and trying and often so painful and distressing a way of leaving the world; and so expensive too, frequently exhausting the entire resources of a family.

Until the last few years the idea was that consumption was a disease which was in the family, a constitutional tendency which could only be accounted for by heredity and against which it was in vain to strive, an inevitable evil to be submitted to as a decree of inscrutable providence. Added to this was the impression that it was incurable, and thus efforts to relieve and cure it were paralysed. But these ideas, I am thankful to say, are wrong. Tubercle is not inherent in the constitution. Consumption is not an inevitable disaster, inflicted by a mysterious fate; it is, on the contrary, one of the products of men's ignorance and carelessness. We now know how it is brought about and it is within the power of man to prevent it. Consumption is "caught," to use a familiar expression, from a pre-existing case; not, let me add at once, communicated directly from person to person by breathing the same air or even sleeping in the same room. There is no need to aggravate the sufferings of the phthisical patient by treating him as a public danger; no need to drive wife or child out of the house to save the rest of the family. The agent in the causation and transmission of the disease is the tubercle bacillus, a minute rod-like organism, which multiplies at an amazing rate. It is visible only under very high powers of the microscope and then only after careful straining. A favourite subject of discussion at one time was how many angels could stand on the point of a needle. Well, hundreds of these little demons could be carried on the point of a needle. The bacilli then obtain access to the lungs or to other organs and if they find the soil suitable, and if they are not destroyed by the defensive agencies which are happily present in the system, they proceed to increase and multiply, compressing and blocking the minute blood-vessels and lymphatics, choking the air passages and air vesicles of the lungs, and forming the little pin-head solid bodies which gave rise to the name tubercle. Eventually the nutrition of the structures is so interfered with that they lose their vitality; inflammation is set up and the result is that the tubercles and the portion of tissue invaded by them soften and break down, forming small cavities which extend and coalesce till cavities of considerable size result. This is not the only harm they do, for besides damaging and destroying the tissues they form a poison or toxin which is absorbed into the blood, and by its presence in the circulation gives rise to the fever, sweating, and wasting which attend consumption.

We should naturally suppose that these tubercle bacilli being present in diseased lungs by millions would be carried out by the breath, but this is not so. They are not found in the moisture condensed from the breath, or on a piece of cold glass or metal, or in fluids through which expired air is made to pass. But they are contained in countless numbers in the expectoration and become the means by which the disease is disseminated. These bacilli are possessed of extraordinary vitality, even outside the body, but there are certain agencies which they cannot resist—heat, sunlight, and fresh air. Fresh air and sunlight are, in fact, the great enemies of all pathogenic organisms. The drying of the expectoration, however, does not kill the tubercle bacillus. Apparently, on the contrary, the desiccated organic matter serves as a protection to the bacilli, so that in the form of dust they survive indefinitely. The expectoration, then, of a consumptive person upon a pocket-handkerchief, or accidentally contaminating articles of dress or the carpets of a room, may sooner or later take the form of dust and so be carried about in the atmosphere. But careless people will spit about in the streets and roads and when not under observation in railway carriages and other public conveyances, in public buildings, especially in the corridors and passages, perhaps even in churches or chapels. This is not only nasty but dangerous. There is always the possibility that it may get dried, perhaps on ladies' dresses, which it contaminates, and be dispersed as dust, and it is by the inhalation of germ-laden dust that the seeds of phthisis are planted in the lungs.

We do not realise how ubiquitous dust is. We scarcely know where it can come from when we see it lying on papers, furniture, picture frames, windows, and in the holes and corners into which the diligent housemaid pursues it. You have all seen the motes dancing in the sunbeams crossing the room; you may have seen them in the rays of the lamp this evening. Every mote is a dust particle which may carry on its person numbers of tubercle bacilli. This is how consumption is usually contracted. In every breath we take we inhale an incalculable number of motes or dust of a more palpable form. Some of these may elude the defences which nature has planted in the respiratory passages, the filtering arrangement in the nose for entangling and arresting microbes, and the cilia of the windpipe and bronchial tubes, and reach the air cells. Then, if the local and constitutional conditions favour the development of the bacilli, the mischief is done. Let one bacillus out of a million find its way to predisposed lungs and consumption will be rife.

But there is another way in which tuberculosis is disseminated and that is by means of milk. Cows are very subject to tuberculosis, and at a certain stage of the disease tubercle bacilli are present in the milk. It is through milk so contaminated that children come to have tuberculous disease, tabes mesenterica, tuberculous disease of the bowels and mesenteric glands (better known, perhaps, as consumption of the bowels), and, directly or indirectly, tuberculous meningitis, or inflammation of the brain, or acute hydrocephalus. The disease of bones and joints to which children are

subject are probably also traceable to milk; humpback, hip-joint disease, and the diseases of knees, elbows, &c., which cripple so many children; perhaps so is lupus; and no doubt tubercle is often implanted by milk in early life which develops later into consumption. While blaming the cows we must not forget that a consumptive mother may not only be wasting her own strength by suckling her child, but may be sowing in it the seeds of some of these diseases.

It is interesting to note that asses and goats do not suffer from tuberculosis and to bear in mind that the shrewd physicians of past days used to order asses and goats' milk for persons threatened with consumption. You will see how necessary it is that the milk-supply of large towns should be guarded from tuberculous contamination, and I am glad to find that the health authorities of Huddersfield are fully alive to this. The regulations with regard to cowsheds, dairies, and milk-shops on pages 39 to 44 of the medical officer's report for 1897 are admirable. They may be read with advantage by all consumers of milk and by those who keep cows for the supply of milk to their own households. I should like to see the medical officer of health empowered to make an addition, viz., that no person suffering from phthisis should be employed about cows. Consumptive persons should especially be forbidden to engage in milking or in the handling or distributing of milk. I do not like to contemplate the disgusting possibility of contamination of milk by sputa, but we cannot but admit that it might occur. There is no need to consider at any lengh the contingency of the communication of tuberculous disease by means of meat. This is adequately provided against by the public slaughter-house and by the careful inspection of meat. You are all the more secure in Huddersfield in consequence of the excellent relations which exist between your medical officer of health and the butchers of the town. Besides we do not eat our meat raw, and cooking is fatal to bacilli. The measures which are required for the prevention of consumption are at once suggested by what I have said as to the methods by which it is disseminated, but before entering upon these I must say a few words with regard to the old idea as to family proclivity and hereditary tendency to consumption. This was not a mere theoretical assumption; it was based on observed facts, and nothing could be more foolish than to reject a conclusion founded on experience simply because the explanation was erroneous.

Although the immediate cause of consumption is the implantation of the tubercle bacillus, it is still perfectly true that consumption runs in certain families and that constitutional predisposition is an important factor in the production of the disease. But it is not actual disease which is transmitted from parent to child, nor will any degree of tendency in the constitution induce it. The hereditary constitutional predisposition is simply a liability to tuberculous disease on exposure to the germs, a vulnerability of the tissues producing a suitability of soil. Two people may be equally exposed to invasion by the bacilli and one will develop phthisis while the other will not, and we can usually tell beforehand which of the two will succumb and which resist. It may be mentioned that gout seems to reinforce the resistance to infection by tubercle, and, curiously enough, so does the anæmia to which young girls are subject. Besides, however, a constitutional susceptibility, another reason why consumption prevails in certain families is that generation after generation live under the same unfavourable conditions in dark, damp, ill-ventilated houses—in houses very often which actually harbour the bacilli left by previous cases.

As regards the preventive measures which must be adopted I will first complete what I have already said on this point as to milk. To begin with, an absolute defence against the communication of tubercle bacilli by means of milk is to boil it. But some people, children especially, do not like boiled milk or think it does not agree with them. But the desired end, the destruction of the bacilli, can be attained by exposure for a certain time to heat short of the boiling point—by sterilisation as it is called. This, however, demands a little time and trouble, and in how many households is the simple boiling of the milk too great a trouble? Fortunately, milk is now sterilised on a large scale at many of the more important dairies and can be supplied in any quantity. As it keeps indefinitely while the bottles are sealed it can also be sent to any distance. I tasted some at the Sudbury Dairy on Lord Vernon's estate a few weeks ago which was a month old and as fresh and sweet as on the day it was milked. The railway companies ought to insist on this sterilised milk being kept at refreshment rooms instead of the tumblers of milk which we see exposed on the counter—which may have been standing there for half a day, absorbing bacteria and filthy emanations of every sort. If the railway company do not insist on it in defence of their passengers I hope the public will do it in self-defence. It is to the defensive instincts of the public that we appeal. But while we can kill the bacilli in milk we have a right to demand that milk shall be supplied to us which does not contain them. This opens up a large subject. An enormous proportion of the milch cows in this country and over most of the continent is affected with tuberculosis and they are potential sources of disease. Contrary to one's expectations, tuberculosis is much less prevalent among cows kept for dairy purposes in large towns than in the herds of dairy farms. This is due to the fact that cows which come under the purview of the medical officer of health are inspected and perhaps tested and such as are diseased are killed off or quickly got rid of in some way. It is a melancholy thing that the greatest danger comes from fresh country milk. It is with great reluctance that I contemplate the imposition of a new burden on the distressed agriculturist, but pure milk we must have. Fortunately, an easy and certain test for the presence of tuberculous disease in the cow exists in the subcutaneous injection of tuberculin, and already in many herds animals found to be affected are separated from the rest and gradually got rid of. In a few years with precautions against the introduction of new animals affected with tuberculosis the disease can be eradicated. This is a matter for rural and district councils and for land-owners. It has, in fact, been taken up by far-sighted and public-spirited landlords, and the Minister of Agriculture, the Right Hon. Walter Long, has given a conditional promise that tuberculin shall be supplied and the veterinary surgeon paid by Government. To insist on the universal testing of herds and the immediate slaughter of all affected animals would be ruinous to farmers unless there were compensation, and compensation would involve a demand for money which no Chancellor of the Exchequer could face. It would, besides, be a premium on carelessness and neglect of hygiene. Bad farmers would get rid of sickly beasts of their own making at the public expense. The extinction of tuberculosis in cattle must, I am afraid, be a gradual process, but in proportion as it is accomplished the farmer will be a gainer because his tuberculous cows die. I have had placed in my hands an appalling list of losses of cows year after year from this disease by an intelligent and industrious farmer. In the meantime we must boil or sterilise our milk.

Prevention of the spread of consumption from persons suffering from the disease practically resolves itself into the destruction of the sputa. The sufferers themselves must be brought to understand this and to realise that unless they adopt and faithfully carry out the necessary precautions they are a standing danger to their family and friends and to the public generally. The families of consumptive individuals must be impressed with the same idea, and the general public must defend itself by insisting on what is necessary for their safety. Convenient receptacles for expectoration have been devised, and one of these patients must carry about with them and conscientiously make use of. Every night and morning, or more frequently, the contents must be destroyed, if possible by burning, and the vessel must be well washed in boiling water and cleansed by some disinfectant, a little of the disinfectant fluid being left in it to receive the expectoration. If no fire is available it is, perhaps, permissible to throw the contents of the spittoon down the water-closet or privy well mixed with a powerful disinfectant, never should they be thrown on an ash heap or out into the street or road or garden or field. Pocket-handkerchiefs should not be employed unless in the form of a square of soft paper, such as is used by the Japanese, which can be at once burnt. Some of my zealous friends advocate notification of consumption, as is done in cases of fever, but, I ask, what are you going to do with the patients when you have notified them? All the hospitals in the kingdom would not hold them, and I doubt whether any effectual inspection and enforcement of precautions would be practicable. The worry would be intolerable. And if we wait till the Legislature enforces compulsory notification years will be lost.

One form of notification, however, is already in force—the death certificate—and action ought to be taken upon this. The room or rooms in which a consumptive patient has lived and died ought immediately to be thoroughly disinfected under the supervision of the medical officer of

health. In the case of those who have received public help during life this should be imperative, and others will, I am sure, see the necessity of it in the interest of other members of the family. But there are preventive measures to be taken on the part of those as yet in health, and these are of especial importance in the case of those who belong to families in which there is an inherited susceptibility. The most effectual of these is to live, as far as possible, in fresh air day and night, summer and winter. The closely-fitting windows to which we attach such importance are a snare and a delusion. When we are sitting in a room with a fire if air cannot make its way in by the widow from the open air outside it will come in under the door from the passage and basement. Fear of a draught from a window open at the top leads to that most pernicious of draughts along the floor and about the ankles. Ventilation is of vital importance. But it is necessary by night as well as day. Everybody ought to sleep with the window open and the bedroom ought to be as fresh in the morning as when it is entered at night. I believe—it is a mere conjecture, of course—that if we all slept with open windows the mortality from consumption would be reduced by one-half from this alone. There would be fewer colds and coughs, too. The construction of houses, again, is a matter of great importance. There ought not to be a dark corner in a house, still less a dark passage. Sooner or later a dark passage or staircase will harbour germs, and, as everybody knows, they are the homes of dust. From this point of view some of the extensive flats and gigantic hotels which are now so numerous are a source of danger. In many of them the passages are tortuous and dependent on gas or electricity for light. Efficient ventilation is impossible, and as an enemy of germs even the electric light is a poor substitute for the sun. I used to be greatly astonished to meet with tuberculous disease in families living in splendid country houses, with every advantage of climate, soil, and surroundings, and all the aids to health which wealth and education can command. At last I found that the secret was dark corridors and, in one remarkable case, a dim central hall. I was chatting with an eminent man of science this summer and happened to allude to this conclusion of mine, upon which he told me that he was the sole survivor, I think, of eight brothers and sisters, and that he had lost almost as many uncles and aunts, all from phthisis, and that the family home was just such a large and imposing but dark and gloomy house as I had described. I need scarcely mention the necessity of attention to the personal health. Excesses of all kinds diminish the constitutional resistance to tuberculous invasion. Alcohol in excess not only stupefies our brains but our phagocytes, as the cells are called, which attack and destroy microbes.

So far I have said nothing of the treatment of those suffering from consumption, and you might be disposed to think that this formed no part of my subject. But it does. Nothing can be more efficacious in preventing the spread of consumption than to cure those already affected by it, unless, indeed, you kill them off out of the way. Now a great deal more can be done to arrest and cure phthisis than was formerly supposed possible by means of what is called, and what is in truth, the open-air treatment. We have been in the habit of sending phthisical patients to the shores of the Mediterranean in search of sun, to the mountain snows of Switzerland for a germ-free atmosphere, or voyages to every part of the world for the healing virtues of sea air, perhaps to special institutions in Germany or the Black Forest. Many returned better, some well, others perished miserably far from home and friends. At length we have become alive to the fact that the curative agent is not any particular air, but simply air. Thus the remedy for consumption lies ready to our hands, and instead of being attainable only by the favoured few is available for all. I hold in my hand a pamphlet by Dr. Philip, of Edinburgh, of which the title is, "On the Universal Applicability of the Open-air Treatment of Pulmonary Tuberculosis," and this is not a mere pious aspiration, but a verified experience. Dr. Philip at Edinburgh, Dr. Burton-Fanning on the Norfolk coast, Dr. Gibson in Ireland, and others elsewhere have shown that consumption can be treated successfully in practically all parts of our islands. This has revolutionised our ideas and it has created new duties. If consumption is preventable it ought to be prevented—if it is curable it ought to be cured. What is needed for this end is the erection of suitable sanatoria and these ought to be provided within easy reach of every large town. Certain requirements must be fulfilled: there must be a dry soil, a southern exposure, protection from the east and north, absolute freedom from dust, and, if possible, from fog. The special desiderata are a maximum of sunshine and a minimum of wind and wet. The construction of these sanatoria and their internal arrangements will be simple. The one thing about them will be that it shall be impossible to close the windows of any room in them day or night. They need, indeed, be little more than sleeping-sheds; but of course they would be made as cheerful and bright as possible, though pictures are almost inadmissible, as the frames harbour dust. The patient will spend the entire day in the open air, wet or fine, warm or cold. Moveable shelters will be provided to shield him from cold winds and to protect him from rain. On no pretext will he sit indoors. The amount and kind of exercise he may take will be determined by his temperature and strength, and his life will be regulated in every respect. No great barrack-like building will be required. A sanatorium will usually consist of a number of small separate pavilions, which may be erected one after the other, and I may venture to point out the opportunity to anyone who desires to be a benefactor to Huddersfield of building one of these pavilions by way of a beginning.

An idea which finds favour is that at first these sanatoria should be self-supporting—should, in fact, be for paying patients. Some part of the disease could thus be dealt with before funds could be raised to provide for consumption among the poor. The association which I have the honour to represent as chairman of the organising committee has for one of its objects the promotion of the erection of sanatoria in all parts of the country. It is to be hoped, and indeed confidently expected, that local branches will be formed for the purpose of ministering to local needs. Such branches will collect and expend their own funds and will erect sanatoria at any suitable spot in the neighbourhood so that patients will not have to go far from home. The special function of the national association will be to coördinate the work of different branches, to stimulate public interest in the prevention of consumption, and to coöperate with all the agencies which have for their object the promotion of public health.

We shall bring before county and district councils the question of milk, and aid health authorities to secure the construction of houses which shall not be standing invitations to disease, and the destruction and reconstruction of such as are, and to promote ventilation and cleanliness. Clergymen and ministers of religion, who see in the way of duty so much of the suffering and distress occasioned by consumption, will, we think, eagerly grasp the opportunity of informing themselves how the disease may be combated and prevented and of disseminating the information among families, thus reinforcing the efforts of the medical man. School-masters and mistresses, again, can do much to teach children the lessons of health and self-preservation. I have only time to hint at a very few of the ways in which a great national association may bring about the prevention of a terrible national loss and the removal of a dark blot on the national good name; and it is because more can be done by a general, simultaneous, and united effort than by any number of isolated local efforts that I give this lecture here to-day. The health authorities of the town have done me the great honour to invite me here to open formally a splendid fever sanatorium. I hope in a year or two to come down again to take part in the opening of a sanatorium for the open-air treatment of consumption, and I hope that in the not remote future, when physicians are lecturing upon tuberculous affections, it will be on examples looked upon as rare and extraordinary cases and not, as at present, furnishing a very large part of their work.

SOMERSET COUNTY ASYLUM.—The Somerset County Council has granted an additional sum of £5500 for the Cotford Asylum; the original cost was estimated at £60,000, but £154,000 have already been spent.

DIPHTHERIA IN THE RHONDDA DISTRICT.—At the recent monthly meeting of the Health Committee of the Rhondda District Council held at Pentre, South Wales, the medical officer of health (Mr. Herbert Jones) stated that a serious outbreak of diphtheria had occurred during the past month. 149 cases were reported and 31 proved fatal, the districts more particularly affected being Trealaw, Porth, and Ynishir.

An Address
ON
SOME CONSIDERATIONS OF THE LIFE AND WORK OF THE GENERAL PRACTITIONER.

Delivered on Oct. 7th at the Inaugural Meeting of the West London Medico-Chirurgical Society, Session 1898-99,

BY S. D. CLIPPINGDALE, M.D. ABERD., F.R.C.S. ENG.,
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GENTLEMEN,—It is the custom for the President of our society to select as the subject of his inaugural address the matter with which he is most conversant—in other words, his *specialty*. The specialty of a general practitioner is, or should be, general practice and it is upon this subject that I, a general practitioner, wish to offer you a few remarks this evening. I am aware that I am addressing many who from seniority and experience know more of this matter than I do myself. From them I ask forbearance if I show ignorance, while from every member I beg indulgence if my remarks lack interest.

The life and work of a general practitioner can, I think, best be studied under three heads: (1) the medical practitioner's duty to his patients and to the public; (2) his duty to other medical practitioners; and (3) his duty to himself.

THE MEDICAL PRACTITIONER'S DUTY TO HIS PATIENTS AND TO THE PUBLIC.

The duty which a medical man owes to the community generally cannot, I think, be overrated. The late Mr. Gladstone expressed his belief that medical men would eventually become the leaders of the people. Whether or not this will be so I think there can be no doubt that the influence of the medical man is increasing. The reason of this trust is, I think, due to three causes. He is known to found his opinions upon scientific facts—that is, he is a disciple of truth; he is known to possess a keen insight into human nature; and he is, I hope, always regarded as a man of honour. The evolution of the medical man, the process by which he has reached his present stage of development, is itself an interesting study.

As you are aware, the earliest practisers of the art were alchemists and astrologers. Then came the Church and to its guardianship there is no doubt that medicine owes much, for the clergy brought natural science and logic to bear upon the cure of disease. The priests were the only educated men at the time and medicine was elevated by their dealing with it. Many of the clergy made a special study of disease, and one of the Popes, I think John IV., was what would be called to-day a qualified practitioner. After a time, as medical science widened and deepened, it became necessary that a separate body of men should be trained to deal with it. Theology and medicine were divorced. Not, however, without a struggle. The new order of practitioners, like all innovators, were looked upon with suspicion. The Pope and his cardinals discussed the question whether, in the interests of the human race, the new order should be encouraged or suppressed. The cardinals, with a natural anxiety for the welfare of their people, were unanimously in favour of suppression. The Pope, so it is said, was of the opposite opinion on the ground that the new doctors, if allowed a free hand, would be sure to kill some of their patients and so prevent over-population of the world. As a strange contrast to this the Bishop of Augsburg a few weeks ago (as related in the *British Medical Journal* of Sept. 24th) found it necessary to issue an edict against what he terms "the illegal practice of medicine by clergymen" and exhorts the priests to keep faith with regular practitioners. For centuries after its emancipation from the Church medicine was little better than quackery. In fact, it is doubtful whether the term "science" can be applied to anything which existed, certainly in this country, before the time of Harvey. The estimate formed of the medical practitioner at various times may be ascertained by consulting the contemporary literature. Thus Chaucer in his "Canterbury Tales" describes a medical man and seems to think him above the average, and attributes the superiority to trusting not so much to theology as to what he calls "natural magic." The practitioners of Shakespeare's time must have had an evil reputation if we are to judge of them by the poet's writings, for in these they are generally the agents by which death is produced. In the "Anatomy of Melancholy" Burton, writing in 1621, speaks thus of the profession: "I would require Honesty in every Physician that he be not over careless or covetous, Harpy-like to make a prey of his patient, or as an hungry Chirurgeon, often produce and wire-draw his cure, so long as there is any hope of pay. Many of them to get a fee will give physic to everyone that comes when there is no cause, thus, as it often falleth out, stirring up a silent disease and making a strong body weak." A century later we find Molière writing in a venomous way about medical men—in such a way, in fact, as to lead one to suppose that he had some personal reason for the attack. Le Sage in "Gil Blas" writes in a similar strain.

The contemptuous attitude shown to the profession was perhaps more or less deserved and was probably due to the following causes. In the first place, the "doctor" was little better than a charlatan, using all sorts of filthy compounds with which to treat his patient. To him the saying may be aptly applied that he "put drugs of which he knew little into a body of which he knew less." If his remedies failed a further piece of chicanery awaited the unfortunate patient, for the "doctor" sought a consultation with a physician, not at the patient's bedside, but in a tavern or at a street corner, and the physician would there, for a fee, prescribe for a patient he had never seen. A second cause of want of esteem was possibly the fact that the surgeon often played the *rôle* of personal servant. Henry VIII., for instance, was washed by his medical adviser and the latter has left an amusing account telling us that his Royal master would only take a bath once a fortnight and then if he were in a temper would only have his feet washed. A third probable cause for the disrespect was the mercenary disposition which unfortunately but undoubtedly characterised many of the profession. This I have mentioned above and it is referred to in many books. On this matter the late Dr. James Andrew informed me that the medical men of London 300 years ago had been credited with bribing the Lord Mayor to give parties in March!

It is not until the beginning of the last century that we find the medical profession referred to with anything like respect, and then the allusions become sympathetic. The poet Pope, for instance, says of his physicians: "There is no end of my kind treatment from the Faculty; they are in general the most amiable companions and the best friends as well as the most learned men I know." Of Dr. Lettsom, the celebrated physician of the reign of George III., it is recorded that "generosity was the ruling feature of his life," and Dryden writes: "That I have recovered is owing, next to God's mercy, to the skill and care of Dr. Guibbons and Dr. Hobbs, two ornaments of the profession whom I can only pay by this acknowledgment." A study of latter-day literature will show that the medical man is growing in public estimation. Dickens and Thackeray, it is true, write in satire of the profession; but satire is characteristic of these distinguished novelists. In the modern novel the medical practitioner often receives an amount of adulation which is fulsome, but honest tribute is to be found in the writings of the American poet Whittier, the late Mr. John Timbs, Mr. Cordy Jeafferson, Mr. Symington, Mr. William Andrews, and many others, while sympathetic articles are constantly appearing in the journals, notably the kindly and graceful writings in the *Spectator* last year. With his position in public favour firmly established and with the look for guidance from his fellow-men, how is the practitioner to discharge his trust? and firstly:

What part should a medical man take in municipal or imperial government? I have never felt free to respond to invitations to go upon a local board. It has always seemed to me that the contentions which often characterise the proceedings of these boards are incompatible with the calm required for medical practice and I am of opinion that the work of these boards is best left to the excellent business men who generally compose them and to their responsible medical advisers. With regard to the House of Commons it should always be remembered that a medical man who becomes a Member of Parliament does so as the representative of one or other of the political bodies. When he speaks he is listened to, not as a medical man, but as the agent of the party he represents. The political doctor is in my mind as unsatisfactory as the political parson, and for a

medical man to achieve success as a politician appears to me to amount to a confession that he blundered in choosing his career. Government wants guidance in matters of health, but should not they get this as they get guidance in matters of law? Corresponding to the law officers of the Crown should there not be a Minister of Health—a medical man of great repute. The Minister of Health would of necessity be changed with the change of Government, but this would ensure that the post would always be filled by an up-to-date man. With a medical man as Minister of Health we should cease to witness the curious phenomenon of medical questions being answered by a gentleman who may perhaps be a successful brewer. As to the representation of the profession itself in Parliament I fail to see why it should not be represented where the other two professions are represented. I cannot believe that the House of Lords would suffer in dignity or in utility by the creation of a certain number of life peers on the nomination of bodies like the Royal Colleges of Physicians and Surgeons. With regard to the public services, it is a satisfaction to note that the office of coroner is now frequently given to a medical man who has taken the trouble to graduate in law also, the first appointment of this sort in London being that of Dr. Luxmoore Drew, the admirable coroner of this district. As to the military services, voluntary or regular, we must rejoice that our comrades in arms have at last received the positions and titles which they justly deserve; but I think we should deprecate a disposition on the part of our military brothers to forget that they enter the army as medical officers or a desire to exchange the medical for the military spirit. Doing this has been compared by Brigade-Surgeon Climo, and I think rightly compared, to the child who, possessed of a priceless jewel, prefers the setting.

What duty does a medical practitioner, as a teacher of hygiene, owe to those with whom he may come in contact? This duty is one of increased importance now that the Legislature has declared that a man may place his "conscience" above the law, especially as this so-called "conscience" seems to be the peculiar possession of ignorant people. It is also the duty, I conceive, of every medical man to point out that the object of medicine is its own obliteration, that death should follow senile decay alone, and that the stamping out of disease is a possibility, though its realisation will be delayed by the misguided action of faddists and "antis."

In what way can the medical practitioner best discharge his duty to his patients? It has been said that a good practitioner will aim at becoming as efficient as possible and then see that his patients get the benefit of his knowledge. I think it would be well if we asked ourselves occasionally such questions as these: How often do I attend the meetings of the Medical Society? what part of my annual expenditure in books goes in the purchase of medical literature? do I utilise my holidays in any way for the benefit of those who enable me to enjoy them? With regard to the last of these questions I may say that it has been my custom for some years to spend my holidays in health resorts. In this way I have had many pleasant trips, not only to the most picturesque parts of these islands, but also to such places as Arcachon and Biarritz, the health resorts of the Pyrenees, the Riviera, in Switzerland and in Germany, and I have seldom failed to find the knowledge thus acquired of benefit to my patients. The late Dr. Wilson Fox addressing his students said, "When taking your holiday, if you are anywhere near a health resort, by all means go and see it." I would venture to say, "Go to the health resort while engaged in active practice for your holiday and if you are anywhere near a golf course, &c., go to it." The late Archbishop Trench on this subject wrote:—

> "They who bid stern duty lead,
> Content to follow, they,
> Of duty only taking heed,
> Find pleasure by the way."

The practitioner who, having seen a patient at a distance, with the knowledge that he has done good and been well paid, with half an hour before his return train starts, and being of an antiquarian disposition turns into the aisles of an ancient cathedral, derives infinitely more gratification than if he had made the journey in pursuit of pleasure. The late Sir Andrew Clark, at a dinner of this society, made, as many of us will remember, some trenchant remarks about the man who prefers the theatre to the medical society, the novel to the medical journal, and, having stated that he came as a matter of duty but with a splitting headache, said that a man succeeded just as he was able to put his sensations under his foot and crush them! Gentlemen, if I speak something like a pedagogue I pray you forgive me. I am sensitive on this matter, for I feel no one needs greater stimulation to work than myself.

How can a medical man, having taken pains to make himself as proficient as possible, benefit his patients by the knowledge thus acquired? Turning to this question, I would suggest that a man often fails through want of confidence in himself. The late Prince Bismarck, when asked why he selected as his medical adviser the youthful Dr. Schweninger when there were so many older and better-known men in Berlin, replied: "The difference between Schweninger and my former doctors lies in this—I treated them, Schweninger treats me." Sir Morell Mackenzie and Dr. Burney Yeo have both pointed out that the medical practitioner should always be *superior* to his patient. The patient, in fact, feels *weak* and seeks *support*. He is the *adjective* and needs the medical man as a *noun* to lean upon.

THE DUTY OF THE MEDICAL PRACTITIONER TO HIS BROTHER PRACTITIONERS.

I wish to point out that the public have a curious notion as to what is called "professional etiquette." "You doctors are so funny," a patient will say, and he insinuates that "professional etiquette" is a variety of trades-unionism existing for the benefit of the medical profession and to the detriment of patients. It is not easy to make him believe that "professional etiquette" is simply the practice of the Christian rule of doing to others as you would have others do to you. The peculiarity of the medical practitioner, however, is that he carries this rule out more faithfully than others. The clergyman, for instance, does not expel from his congregation the person who lives in another parish, the lawyer does not refuse advice to a client who has consulted another lawyer, and the tradesman assuredly takes delight in getting his neighbour's customers. To a young practitioner, however, who wants to pull well with his colleagues I would strongly advise a perusal of Mr. de Styrap's excellent work on "Medical Ethics," and the report upon the same subject by the Shropshire branch of the British Medical Association. A study of these works and a careful consideration for the feelings of others would, I think, lessen the number of painful revelations which we are accustomed to see in the correspondence columns of the medical journals.

What duty do we owe to our brother practitioners in the poorer parts of London? We who live among cultured people, near parks and museums, who receive remunerative fees, and are shown hospitality by our patients, are, I fear, but ill-acquainted with the struggles of our equally deserving brethren who practise exclusively among the poor. I am not certain whether we do not look upon them with something like contempt and complain of the small fees which they unfortunately are obliged to accept. Yet surely the poor man's shilling is as respectable as the rich man's guinea and the poor man's medical attendant is generally one of vast experience and often a man of culture. I am acquainted with the case of an old Eton boy who has to receive a smaller fee than a shilling. To help these, our less fortunate brethren, is indeed a difficult problem, but I think a hint may be taken by what is known as the "affiliation among the Churches"—that is, a scheme by which a rich parish helps a poor one. The idea as regards medical work is certainly at present impracticable and may be altogether impossible, yet I can conceive that upon recognised and equitable principles an interchange of practices would be possible and beneficial. The West-end practitioner would be glad to realise the hardships of his less fortunate brother in the East. The East-end man would find relief by a stay in the West. An outcry would be raised by our wealthy patients, but they would have to follow us into the East and bring their wealth with them.

What is our duty in the matter of consultation? I think it should be clearly laid down that one general practitioner should never meet another general practitioner in consultation. Not for fear of arousing jealousy but simply in the patient's interests. If two men practising on the same lines and receiving the same fees meet in consultation they must either agree or disagree. If they disagree the patient is placed in the awkward or impossible position of deciding between them. If they agree the patient gains nothing. The entire body of consultants is within easy reach of us and if the patient cannot afford the fee for the consultant's advice he should seek that advice gratuitously at the hospital. As to the consultants we call in I fear there is a tendency to select our old teachers or our personal friends, and our old teachers and personal friends are rather apt to recommend us as private practitioners to the exclusion of perhaps better

men. I think the interest of the patient alone should guide in such matters. The consultant whom we summon to our patient may not be the consultant whom we should select for ourselves or families, but there may be many reasons in the interests of our patients to influence us, and the interests of our patients should, I think, be our sole guide. A class of practitioners which I cannot understand includes the men who while engaged in general practice pose as specialists and the consultants who engage in general practice. In this neighbourhood I fear it is not uncommon for a consultant to visit a patient alone. He does so in the first instance for a smaller fee than he would receive in consultation and sometimes pays a second visit without fee—a "friendly" visit he calls it. In this way he enters very closely into competition with the general practitioner. Would it not be better for the practitioner of either kind to restrict himself solely to his proper work? The medical sphere is such a large one that it requires a man's entire energy to discharge properly his duty in the branch which he has selected for his own work.

> "One science only can one genius fit—
> So deep is human knowledge, so shallow human wit."

THE GENERAL PRACTITIONER'S DUTY TO HIMSELF.

If a general practitioner takes pains to make himself efficient, and if he lets the patient benefit by his efficiency, he is certainly entitled to look to the patient for adequate remuneration, and yet how often is he doomed to disappointment? The lines quoted in his presidential address by Dr. Alderson are too often true:—

> "God and the doctor we alike adore
> When sickness comes, but not before;
> The danger over, both are alike requited,
> God is forgotten and the doctor slighted."

To secure prompt remuneration I think it would be better if we could follow the example of barristers, of consultants, and of medical men in Ireland and in some places abroad—that is, to secure our fee at the time of our attendance. "The sick man," someone has said, "pays willingly while his tears are wet." Our custom of keeping books and rendering accounts, while it savours of the custom of tradesmen, is often, I think, the cause of serious loss to our pockets.

In the care of his health I fear the general practitioner is too heavily handicapped by the nature of his work to take much heed. For instance, no conscientious practitioner can take an hour for a meal and rest in the middle of the day if the patient who sent early in the morning has not yet been seen. The lunch is postponed. The digestive organs, ready with their juices to receive and digest the expected meal, think their agency is not required and resume a state of inactivity from which they are rudely awakened one, two, or three hours afterwards. They are then called upon for extra work, get worn out early, and dyspepsia results. I think it better to take at the usual meal hour a mere *soupçon* of food, if there is not time for a proper meal, and then wait for the next regular meal hour for a fuller supply. The disturbed sleep, the exposure to weather, the anxiety caused by difficult cases are all matters over which I fear a medical man has little control. No wonder the average years of his life are as low as fifty-seven. He must accept the pains as well as the pleasures of his profession and can only look forward to retirement to be freed from the former and to dwell with gratification upon the latter.

In the matter of recreation I think that no medical man should be without his hobby. It has been said that a man who sticks sufficiently closely to his work finds in it his recreation as well as his means of living. The nature of the practitioner's work, however, demands that his mind shall be abstracted at times from things morbid. The neglect of this demand is liable to be productive of misery when the time comes for cessation of active work. A celebrated physician complained to his friend in these terms: "I am told I must retire and make way for younger men. I have done nothing all my life but physic people and now I am told to go into the country and grow cabbages." I grieve to know that this distinguished man's period of retirement is not as happy as it should be. Lord Bolingbroke, the celebrated statesman of Queen Anne's reign, said, "Blessed is the man who has a hobby"; and a well-known medical man has said, "If you cannot find pleasure in the study of geology, of natural history, or of astronomy, then by all means make a collection of old walking-sticks, postage stamps, or pieces of cracked china."

Finally, I would advise a *spirit of contentment* as conducive to happiness in a general practitioner's lot. His work is surely a creditable one. The necessity of being able to deal efficiently with disease in all its forms at all times, the ability to treat successfully persons of all ranks and of all tempers, surely compel the possession and the exercise of knowledge and tact which are not surpassed in energy and self-denial by the requirements of any other branch of practice. It is a pity for the medical practitioner having put his hand to the plough to look back or to look above. I am sure many of our consulting brethren could tell us bitter tales of the struggle of their earlier years. In general practice there is much, if we only look for it, to interest and instruct us; much to keep our sympathies green and our spirits contented. Mr. Fildes's picture, the picture which attracted so much attention a year or two ago, did not pourtray the court physician, whose name is in the paper every day, nor the popular specialist who is the idol of society. The picture represented the general practitioner in the humble cottage, watching the sleeping child and thinking what he will have to tell the parent, and watched himself by the anxious parent trying to forecast what he will have to hear from the doctor. The picture recalls the lines written upon a portrait of the late Mr. Merriman of Kensington:—

> "What does it tell us? That to thee
> The noblest task on earth was given,
> The brightest service that we see
> Conferred on mortal under Heaven.
> To heal the sick, to lighten pain,
> To gently cool the heated brow,
> And, like an angel, bring again
> Hope to the hopeless, such wert thou."

I have referred to the ingratitude of patients, but how often do we receive from them touching evidence of their esteem and affection? How many of us can display valued, if not always valuable, gifts? It is said that a medical man should have his coat made with two pockets—one for his fees, the other for his insults. But is not a third pocket sometimes necessary—one to receive these welcome gifts?

There must surely be something in medical practice to awaken the emotions and stimulate the intellect, for we find the highest forms of literature enriched by the contributions of members of the medical profession—witness the works of Goethe, Sir Thomas Browne, Goldsmith, Smollett, Sir Samuel Garth, Sir Richard Blackmore, Akenside in the past, and besides others Oliver Wendell Holmes, Conan Doyle, and John Watson in the present day. How many of us could write, founded upon our cases, histories like the "Diary of a late Physician" by Samuel Warren, who was a medical man as well as a lawyer? At Monte Carlo one of the English surgeons there informed me that his patients suffered not so much from physical ailments as from nervous tension and exhaustion the result of gambling, and that they went home not with health improved by the climate of the Mediterranean, but with constitutions shattered by excitement.

The family doctor is, perhaps, more than either the clergyman or the lawyer the family friend. He is seen more frequently than either of the others and is consulted about many matters which are not medical. He is looked up to with childlike faith for advice which it is known will be given with neither satire nor contempt. It is his duty to minister to the wounded spirit as well as to the weakened body. In my own case I have been encouraged to do this by the motto of my alma mater, the London Hospital—*Nihil humani alienum puto.*

A CASE OF CHRONIC INFANTILE MENINGITIS WITH BASAL DRAINAGE.

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THE following case is of interest because of the extreme degree of rigidity which gradually became established and also because of an attempt which was made to drain the lateral ventricles through the subcerebellar space. Parkin[1] was the first to perform this operation and gave it the name of "basal" drainage to distinguish it from "cortical" (that is, drainage through the fontanelles and direct puncture

[1] THE LANCET, July 1st and Nov. 18th, 1893.

FIG. 1.

Reproduced from a photograph of the child taken from the back on April 22nd, 1898. The retraction of the head is well marked, but the opisthotonos and rigidity of the legs were more excessive than are apparent from the illustration.

FIG. 2.

Reproduced from a photograph of the child from the ventral aspect taken on the same date, showing pronation of the forearm, extension of the legs, and drawing inwards of the great toes

of the lateral ventricles) and "vertebral" drainage. Subsequently Waterhouse[2] drained the same space in a case of tuberculous meningitis. Glynn and Thomas[3] in 1895 described a case of chronic hydrocephalus in a young man subject to severe headaches, insomnia, and sickness in which the skull was trephined in the occipital area and drainage established, the result being perfectly satisfactory.

The patient, a female child aged ten months, was admitted into Tottenham Hospital on Feb. 16th, 1898. About three weeks previously she fell on her head out of a chair and was sick on the next day with convulsions. She afterwards gradually fell into a drowsy insensible state. Two days before admission she had several screaming attacks and at the same time retraction of the head was noted, but no strabismus. On admission she appeared to be semi-comatose and took no notice. The head was not retracted. The pupils were equal and reacted well to light. There was neither strabismus nor nystagmus. The heart and lungs were normal. There was no tenderness or retraction of the abdomen. The temperature was 97° F. The fontanelles were widely open. During the day the child vomited once. On the 17th the temperature rose to 101°. On the 23rd a vesicular eruption appeared on the face, trunk, and limbs, varicelloid in character. This afterwards became purulent and left scars. On March 5th the vomiting had continued and had gradually become worse. Nasal feeding was now commenced and continued throughout the illness. On the 8th a mixture of peptonised milk and chicken broth was given as food and 1 gr. of hydrargyrum cum cretâ every night. As a result the vomiting ceased. On the 11th a purulent discharge commenced from both ears and the temperature again rose to 101°. On the 14th a convulsive attack occurred lasting thirty minutes and the temperature rose to 102°. As the convulsion was not relieved by a hot bath a few whiffs of chloroform were inhaled. The convulsion was general, with arching of the back and retraction of the head. An enema of bromide of potassium (5 grains) and chloral hydrate (1½ grains) was ordered. A lotion of perchloride of mercury (1 in 3000) had been used for syringing the ears. Sherry whey was added to the chicken broth on the 11th and mercurial ointment had been daily rubbed into the abdomen and spine. On the 14th the vomiting also returned and the food was altered to peptonised milk and chicken broth. On the 19th the temperature reached 104° and the breathing was of the Cheyne-Stokes type. The optic discs were somewhat blurred, the veins were full and tortuous, but there was no marked retinitis. On the 26th there had been no more convulsions. The temperature chart was irregular and oscillating. There were now well-marked opisthotonos, retraction of the head, and carpo-pedal contraction. On April 27th the condition was unaltered as regards the rigidity, but the head now began to increase in size. Its circumference measured 19 in., the forehead was prominent, and the sutures were widely separated. Rigidity was extreme. The fingers were clenched, with the thumbs turned inwards, the forearms were prone, and the arms were extended. The legs were extended to such a degree that the feet touched the pillow and were on the same level as the retracted head. The tibiæ were rotated outwards and the knee-joints were rigid. The feet were extended and rotated inwards. The great toes were drawn inwards towards the sole. Nystagmus was present to a slight degree and strabismus occurred at times. On May 1st, the head having been prepared for operation in the usual way, Mr. Carson made an incision under chloroform from the external occipital protuberance towards the right mastoid process and turned down a flap of skin. The periosteum was stripped off and a portion of bone between the curved lines about half an inch in diameter was removed. The dura mater was exposed and opened. A bent probe was introduced as far as the tentorium and turned into the fourth ventricle, when about 2½ oz. of clear fluid escaped. A drain made of silk strands was introduced and left inside; the wound in the dura mater was stitched up, skin sutures were inserted, and the wound was dusted and dressed antiseptically. Very little hæmorrhage occurred and the operation proved easy of execution. The child bore the operation well. On the 5th the temperature had now been normal for two days. The child appeared to be somewhat better; there were less retraction of the head and rigidity of the limbs. The arms and legs were massaged daily and the child retained food well. On the 12th the child steadily became weaker. The stitches were removed on the 7th. The wound had healed and there was still a slight discharge of cerebro-spinal fluid. Death occurred on the 23rd. The illustrations show the posture assumed by the child on the day before death.

At the post-mortem examination great thinning and flattening of the cortex were noticed, with hyperæmia of the pia mater. Over the fourth ventricle and sella turcica the membranes were opaque and thickened. The ventricles were enormously distended with clear fluid and on removing the brain a large quantity of clear fluid escaped from the sides at the base, evidently from the posterior subarachnoid space. The iter and third ventricle were enormously enlarged. The lateral ventricles were so greatly distended that the brain appeared as a mere shell enclosing a reservoir of fluid. The ependyma and septum lucidum were much thickened. The choroid plexuses were relatively insignificant in size. There was no fracture of the bone, no laceration of the brain, and no suppuration within the temporal bones. The purulent discharge from the ears lasted only a few days and was obviously due to dental irritation and not to middle-ear trouble. The spinal cord was healthy and the central canal was of normal dimensions. There was no evidence of syphilis and there were no tubercles.

The causal relation of traumatism to the symptoms appears definite and direct, although the fact that the fontanelles were widely open on admission might lead one to suppose that a chronic hydrocephalus independent of the accident had already commenced. On the other hand, the coma and sickness began immediately after the fall and gradually became more severe during the four months the child survived. It is true that neither fracture nor laceration was discovered at the necropsy, but a laceration might have had time to heal and become obscure. There was certainly much thickening over the sella turcica and in the subcerebellar region. Obviously the result of the injury was to irritate the secreting cells of the ependyma, block efferent lymph channels, increase the circumference of the head and particularly the vertical measurements from ear to ear across the anterior fontanelle.

The operation in itself is not difficult nor is it attended by any special risk. Although the child was in a wretched and impoverished condition she bore the operation well and even improved somewhat afterwards. To be of any use, however, it should be performed as soon as the measurements of the head begin to increase, otherwise the lateral ventricles become dilated beyond any hope of amelioration. Drainage by means of silk strands we found to be unsatisfactory and in future we should be disposed to use capillary rubber tubes provided with an arrangement for preventing the too rapid escape of fluid.

[2] THE LANCET, March 10th, 1894.
[3] THE LANCET, Nov. 2nd, 1895.

ON COMBINED PLEURAL AND PERICARDIAL ADHESION.[1]

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MANY years ago I remember to have seen a case which appeared to give much difficulty to my seniors who were in charge of it. I was then scarcely in a position to form an opinion for myself, but I remember that a diagnosis of double pleuritic effusion was made. In the absence in those days of exploring needles this diagnosis was during life neither proved nor disapproved, but after death it was found that both pleuræ were universally adherent, very much thickened even to the thickness of ½ in., and that the pericardium presented a precisely similar condition except that the actual thickness of the fibrous layer was less in the case of the pericardium than the pleura. The case made a great impression upon me, but I have never been led to make much of the bearings of it until one somewhat similar presented itself in the latter half of last year under my own care in Guy's Hospital.

A woman, aged forty-two years, was admitted on May 20th, 1897, for dyspnœa, cough, and pain in the chest. The patient's father and an uncle had died from phthisis; her

[1] A paper read before the Nottingham Medico-Chirurgical Society on April 27th, 1898.

mother died from bronchitis at the age of seventy-five years. Four years previously the patient had had scarlet fever. In February of this year an adeno-myxoma was removed from the left breast by Mr. Arbuthnot Lane. About Christmas she had noticed that her abdomen was growing larger, but without pain. Towards the end of April she had a slight cold and she said that on the 27th she had slept in a damp bed. The next day she had chill and shivering, dyspnœa, pain between the shoulders, and cough. On the 29th she was rather better, but worse on the 30th, and so she continued until May 2nd, when she laid up and was attended by Dr. James Wills. The feet and legs were then observed to be swollen. After that her condition varied, the dyspnœa being sometimes so great that she could not walk about; the pain also varied as to position. On May 15th Dr. Newton Pitt saw her in consultation and the chest was explored with a needle at the right base, but no fluid was found. On admission she was seen to be a middle-aged woman, with dark hair turning grey, dark eyes, and sharp features. The face was flushed and slightly swollen; the legs and feet were slightly swollen and there was œdema over the sacrum. Otherwise she was thin. The breathing was quiet and shallow and she had a hard dry cough. The chest was flat and the epigastric angle was less than 90°; there was no sucking in of intercostal spaces. The two sides moved equally. Tactile vocal fremitus was normal in front but deficient at the right base behind. Both bases were dull behind, the right up to one inch below the angle of the scapula, the left up to one and a half inches from the angle; there was resonance elsewhere. The vesicular murmur was absent from both bases over the dull areas; elsewhere it was normal. Fine inspiratory râles were heard at the left base behind and at both bases in front. The pulse was 96, regular, feeble, soft, and compressible. The impulse of the heart could not be seen, it was just felt in the fifth space, an inch below the nipple and half an inch internal to it. Præcordial dulness was limited above by the lower border of the fourth rib, and internally by the left border of the sternum. There was no murmur. The abdomen was tense and slightly swollen and there was some œdema of the skin on the left side. There was some dulness at the sides, but it did not move with change of position. The temperature was 99·4° F., the pulse was 96 and the respirations were 38. A week later the condition was much the same. There were dry cough, dyspnœa amounting to orthopnœa, and pain in the left side of the chest. At the right base there was still absence of breath-sounds and tactile vibration and at the left base the breath-sounds and tactile vibration were very deficient. A few days later there was some increase of râles in front on the right side, but the bases were thought to be less dull. The urine on May 31st was free from albumin, but it contained a slight amount on June 3rd, which amounted to 0·5 per 1000 (Esbach). At this time also the urea was found to be on two separate occasions 10 grs. and 12 grs. per ounce. During the month of June she became more œdematous, the abdomen increased so as to measure 31½ in. in circumference, there was much œdema over the sacrum, and the feet and legs and face swelled more. During July and August also there was no material difference, only an increase of the dropsy in every way and a persistence of the physical signs of the lungs. The abdomen increased to 39½ in. in circumference, due partly to ascites and partly to cutaneous œdema, which extended round the loins to the back and reached up to the angles of the scapulæ. At both bases the chest was dull, the entry of air was deficient, and râles were audible. The right side was slightly worse than the left. In front some râles were audible below the third rib. By the beginning of September the œdema extended to the upper extremities and the face, but was very variable in these parts; on the 21st the pulse was 104, the respirations were 50, and the temperature was 97°. The condition of the chest was as before. There were no cardiac bruits. The lips were full-coloured and congested. Examination of the fundus of the eyes gave negative results, there being no neuritis, retinitis, or hæmorrhages. During October some relief was obtained by puncture of the swollen legs. On Oct. 14th the patient had a rigor lasting ten minutes, on the 15th one lasting twenty minutes, and on the 24th a third, more severe, lasting nearly an hour. On Oct. 26th dulness was noted on the left side of the chest in front and some râles under the left clavicle; the posterior dulness extended quite up to the scapular angles. From this time she became more drowsy and collapsed, and she died on Nov. 7th. The temperature had been nearly always normal or subnormal. Only on two or three occasions for a few days at a time during the last three weeks of her life did it rise to 101° or 102°.

At the post-mortem examination the face and arms were found to be very thin and the abdomen and legs were œdematous. Both pleuræ were thickened all over and both surfaces were tightly adherent. The pericardium also was firmly adherent all over, so that it could be peeled off the heart, and it also was much thickened. Further, there were dense pleuro-pericardial adhesions and much fibrous tissue matting together the vessels and other structures in the mediastinum, the results, therefore, of a mediastinitis. The lungs were small and compressed, and quite airless except at the apices. The bronchial tubes were very much dilated at the left base, but less so in other parts. The bronchial glands were normal. The right auricle was dilated and the right ventricle was dilated and much hypertrophied. The left ventricle was very small and its walls were not thickened. There was no endocarditis; the valves were healthy, and the orifices measured as follows: the tricuspid, 4¾ in.; the pulmonary, 3½ in.; the mitral, 3½ in.; and the aortic, 3¼ in. The peritoneum was universally thick and opaque, especially on the pelvis and on the under surface of the liver. Over all this, especially in the pelvis, was much recent lymph. The liver was compressed from before backwards, and the capsule was thickened, involving the gall-bladder, which contained a gall-stone of the size of a filbert. The gastro-hepatic omentum was contracted. The spleen was hard and small, with a thick capsule, and it was adherent to the left lobe of the liver. The kidneys were small and healthy.

As will be seen the features of this case are, *clinically*, abolition of the action of the bases of both lungs without certain evidence of liquid in the pleura, cardiac weakness without marked local evidence of the heart's failure, with early and somewhat pronounced ascites. *Pathologically* they were adherent pleura with extensive collapse of the bases of the lungs and some dilatation of the bronchial tubes adherent pericardium with dilatation of the right auricle and ventricle, chronic mediastinitis (non-suppurative), and ascites with evidences of chronic peritonitis.

The mere coexistence of fibrous adhesions of the pleura and pericardium is sufficiently common. I find that in Guy's Hospital the post-mortem records of nine nearly consecutive years show that there were 192 cases of adherent pericardium, and of these 58, or nearly one-third, were accompanied by thickened or adherent pleura. On the other hand, the analyses of the clinical reports of cases in the medical wards show that only once in three or four years was thickened pleura recognised or diagnosed in association with adherent pericardium. This is, of course, only an illustration of the well-known fact that each of these lesions may present considerable difficulties in diagnosis. I have, however, examined more closely the post-mortem records for one year (1892), in which adherent pericardium was noted 25 times, and in 10 of these cases the pleuræ were also thickened or adherent. Of these 10 cases 3 presented valvular lesions which became the chief feature during life, in 3 the adhesions of the pericardium concerned only very small portions of the heart's surface, in 1 there was a hypertrophied heart with granular kidneys and the pericardial adhesions were limited, and in 2 the patients had undergone operations in surgical wards and died from syncope (fatty heart) and broncho-pneumonia respectively. The last 3 cases showed evidence of former phthisis. One only of the 10 cases presented some resemblance clinically as well as pathologically to the case I have just recorded. The right pleura was universally adherent and the left chest contained 22 oz. of serum and showed recent lymph over the lower lobe. The pericardium was universally adherent with calcareous plates in it The heart weighed 14 oz., and was hypertrophied, and all the cavities were dilated. The muscular tissue was fatty. The patient had had during life dyspnœa, palpitation, and attacks of faintness; there were œdema of the feet, albuminuria, rapid pulse (140), and albumin in the urine; there was no cardiac murmur.

It is with this last class of case that I propose to deal for the present, especially from the point of view, at least in my own cases, that the pleural lesions were very extensive and of great prominence clinically, and that conversely the adhesion of the pericardium was suggested only by the failure of the circulation, not at all by any local manifestations and very little by any changes in the pulse. I have no doubt there are other cases like it and perhaps they are

more frequent than I have been led to believe, and possibly the problems may seem to others easier of solution than they do to me; but I believe that in any case, whether rare or frequent, they form a group somewhat apart from other cases and are worthy of consideration.

One of the first questions is as to their origin. There are, no doubt, many circumstances under which pericarditis and pleurisy may be co-existent or consequent one upon the other; the most familiar is the case of double pleurisy in rheumatic fever accompanying pericarditis. The effusion in the pleura is often extensive, at least on one side, but it is not common to see at one and the same time a complete double pleurisy and pericarditis in rheumatism, and any approach to such a severe extension of the lesion would very probably be fatal. We are familiar also with the complication of pericarditis in acute pleuro-pneumonia, with double pleurisy and pericarditis in pyæmia, and with tuberculous pleurisy and pericarditis simultaneously. But all such explanations of this case present difficulties, seeing that on the one hand we cannot suppose these conditions are the sequelæ of tubercle or pyæmia, and on the other the patient gives no history either of rheumatic pleurisy or of so-called catarrhal pleurisy at such a date preceding her final illness as would explain the lesions found. It may be suggested that in her twelve months' illness the early catarrhal or acute or subacute inflammatory stage occupied the first months and the fatal mechanical results occupied the later periods; but it will have been noticed that the first symptom twelve months before her death was a swelling of the abdomen, which, as I shall show, is consistent with the probability that adherent pericardium with accompanying cardiac failure was already in evidence. It is, of course, allowable to speculate on the scarlet fever of four years previously to her admission to hospital as having been followed by rheumatism or as in some other way having been the antecedent of the implication of the serous membranes. But in that case it is remarkable that she should have at some former period of her life undergone such extensive lesions without having any recollection of the illness and discomfort to which, one would think, they must have given rise. Still, so far as mere antecedent is required, it will be only consonant with modern pathology to regard the scarlet fever and other infectious diseases—e.g., influenza—as sufficient.

Now, turning to the relation between the post-mortem lesions and the clinical symptoms the question presents itself: Are the latter determined by the conditions of the lung—adherent pleura and dilated bronchial tube; or by the conditions of the heart—adherent pericardium and dilated right side; or by the condition of the mediastinum, so-called "mediastinitis"? or what share has each in this production? In the answers to this question we should find, if we can at all, some help towards diagnosing this combination in the future. Beginning with the lung and pleura we find that the physical signs were dulness at both bases, especially the right, and deficient entry of air with some fine râles. The symptoms related to the lung were directly orthopnœa and cough, and indirectly dropsy of the legs and the lower part of the body. It is an old story that thickened pleura will account for dulness at the base of the lung, and when the thick adherent pleura is accompanied by collapse of the underlying lung the occurrence of the physical signs is easily explained. The latter was present here and to it, indeed, the dulness and deficient entry of air must be ascribed. Indeed, I should like to take the opportunity of expressing the view which I have long taught, that the dulness which so commonly persists for a long time after a pleuritic effusion is not due, or due in but small part, to the thickening of the pleura, but rather to the still unexpanded lung, which has been compressed by the fluid previously there. Neither could the thickening of the pleura have much share in the production of the œdema; but the sum total of the pulmonary lesions, especially the collapse of the substance and the dilatation of the tubes, no doubt contributed to that dilatation and hypertrophy of the right heart which was the chief cause of the œdema. In so far as the duration of the adherent pleura is concerned I need say little about that. We know from abundant experience that the pleura is constantly found adherent on one side in cases where, no such condition has been for a moment suspected and where, indeed, so far as the chest is concerned, the patient may have been thought to be perfectly sound and normal. It is possible that the adherent pleura had a share in the production of the dilated tubes, but as there were no signs during life by which they could with certainty be recognised but little help is derived from that view.

It must of course be seen that the chief explanation of the dropsical symptoms lies in the two conditions which the heart presented—namely, adhesion of the pericardium and dilatation of the right heart. Here, again, we are in some difficulty as to the importance of mere obliteration of a serous cavity, and it is clear that the adhesion can only act prejudicially if it causes the occurrence of hypertrophy or dilatation of the cavities of the heart. Even whether it can do that is somewhat doubtful, and the explanations of the coexistence of adherent pericardium and dilated heart are more than one. A simple explanation is that accompanying the pericarditis there is some inflammation of the myocardium—myocarditis—which results in the altered physical conditions. Dr. John Broadbent, in his work on Adherent Pericardium, has provided us with the suggestion—viz., that when the heart dilates as a result of the yielding of the inflamed muscle it is subsequently maintained in this dilated condition by the fibrous changes which take place in the simultaneously inflamed pericardium; and he points out that the right ventricle is more likely to suffer than the left. This was, indeed, the case here; but it would be rash to deny the influence of the pulmonary conditions on the production of this right-sided failure. It may be remembered, so far as diagnosis is concerned, that the impulse of the heart was in the fifth space internal to the nipple, and the percussion dulness did not pass beyond the left border of the sternum. So far, then, it seems probable (or certain) that the dropsical symptoms must be referred to cardiac failure and that a failure on the right side rather than on the left.

When looking for references to literature bearing on the present case I met with some articles by Dr. Heidemann which have a very important bearing upon it and which possibly provide a solution of the difficulties which it presents. His paper is entitled "On the Results of Obliteration of the Pericardium."[2] After reminding his readers that adherent pericardium eventually leads to all the effects of cardiac failure, however arising, such as dyspnœa, œdema, and dropsical effusions, with small, rapid, and often irregular pulse, and that these conditions are now allowed to be the results of a myocarditis coincident with the pericarditis which caused the adhesions, he states that not all cases run the same course and draws especial attention to cases in which ascites was the first prominent symptom and that often long before any anasarca or œdema of the feet was observed. He refers to isolated observations of a similar kind by Hirschler, Riegel, and Pick, and to statements by Rosenbach, Strümpell, Leube, and Schrötter, bearing in the same direction. He then records his own case and follows with 6 other cases already published by Van Deen, Frerichs, Vierordt (2 cases), Riedel, and Henoch. In all of these 7 cases the peritoneum, besides containing fluid, was thickened, or it showed evidences of chronic inflammation. In all of them, with the exception of one in which the thoracic conditions are not given, there was pleurisy either in the form of fluid, or of a thickened pleura, or of extensive and complete adhesions; this was present in two cases. Three of these cases were published as cases of chronic exudative peritonitis, and probably the pericardial obliteration was not a prominent feature clinically or was perhaps overlooked; another is in Frerichs's work on Diseases of the Liver under the heading of Simple Induration of the Liver, which Frerichs attributes to the operation of peritonitis in this case.[3] A fifth is published as chronic pericarditis in combination with chronic pleurisy and peritonitis, and the sixth is from the "Diseases of Children" of Henoch, who regarded it as a case of syphilitic pericarditis and myocarditis. After reviewing and discrediting the opinions of some authors who attribute the early appearance of the ascites to cirrhotic conditions of the liver, or to peculiarities in the circulation of the liver, or to kinking of the vena cava by fluid in the right pleura Dr. Heidemann adopts the suggestion of Weiss that antecedent to the cardiac failure there is, or has been, an inflammatory condition of the peritoneum which favours the occurrence of dropsy in this part of the body rather than in the so far uninjured connective tissues of the lower extremities. Similarly where the pleural surfaces are not adherent hydrothorax

[2] Ueber Folgezustände von Pericardialen Obliteration, Dr. M. Heidemann, Berliner Klinische Wochenschrift, 1897, Nos. 5 and 6.

[3] Frerichs: Diseases of the Liver, Sydenham Society's Translations, vol. ii., p. 98.

will readily result from cardiac failure as it comes into operation. Thus, what is suggested as the course of events in these cases is the more or less simultaneous occurrence of peritonitis, pleurisy, pericarditis, and myocarditis; cardiac incompetence as a result of the last; and serous effusions antecedent to anasarca of the limbs in consequence of the tissue-weakening of the serous membranes.

If we ask the cause, the primary cause, of all this the answer is by no means satisfactory. The micro-organism is always, of course, at hand. Dr. Heidemann says: "It is astonishing that the disease so often attacks the upper part of the abdomen and especially in this part leads to cicatricial processes and extensive matting together. One may well believe that micro-organisms are the excitants of the disease and that after their entry into the abdomen they are carried about by the peristaltic movements of the intestines, "remain fixed in the closed spaces between the diaphragm and the spleen and the liver, and here exercise their poisonous influence." Thus he is prepared to explain the occurrence of fibrosis of the liver, into which the irritating microbes may easily creep, and he appears almost to suggest that the pericarditis and pleurisy might be secondary to the peritonitis with its thoracic localisation. However, let us take his conclusions; they are to this effect. 1. In these cases there is a chronic inflammation of all the serous membranes. 2. The stagnation occasioned by degeneration of the cardiac muscle leads to ascites because on account of the chronic peritonitis the peritoneal vessels offer a *locus minoris resistentiæ*. 3. The cirrhotic process in the liver so often observed under these circumstances is occasioned by the extension of inflammatory irritation from the capsule of the liver as well as by the chronic hyperæmia of the organ. 4. By the growth and contraction of this connective tissue in and about the liver the stagnation and exudation in the abdominal cavity are increased.

If now we compare the case I have here given with this case under Heidemann's care and with the others which he has collected we shall see a very close correspondence. In the former we have the co-existent evidences of inflammation in the pleura, pericardium, and peritoneum, in her also death occurs from the increasing results of cardiac failure as shown in anasarca and general dropsy, and enlargement of the abdomen was an early sign, though there is no positive information as to the exact nature of that enlargement. But it is interesting to note here that one of my colleagues who saw the case for a period of two or three weeks was inclined to believe that cirrhosis of the liver was an important feature in the case. If, however, we interpret the sequence of events in the light of Heidemann's reasoning we must suppose that twelve months before her death, when she began to be ill with swelling of the abdomen, the patient had already gone through a chronic pleurisy, pericarditis, and peritonitis of which at the age of forty-one or forty-two years she had practically no knowledge. Six months later she had apparently an acute illness, during which she was found to have physical signs suggesting effusion of fluid at the right base, and the feet were swollen. On the eighteenth day of this illness the right base was explored and no fluid was found, and the physical signs continued with but little variation, while dropsy became increasingly pronounced until her death nearly six months later. No solution of this difficulty—that is the time relations of the various lesions—is entirely satisfactory.

I propose now to deal with yet another phase of this case, and that is the occurrence of mediastinitis or matting together of the connective tissues about the large vessels of the heart. This subject of mediastinitis is one which has, perhaps, not been separately considered in much detail of late. We shall not find it indexed in many of our modern text-books on medicine, and it will be of interest to examine into its bearings on this case. "Mediastinitis" is a term which runs a danger of being used rather loosely, because what is intended to be predicated of the mediastinum may be predicated as much of the organs in the mediastinum as of the space itself. Dr. Hare's Fothergillian essay on the "Pathology, Clinical History, and Diagnosis of Affections of the Mediastinum other than those of the Heart and Aorta," gives a valuable table of published cases of mediastinitis. These are divided into suppurative and non-suppurative cases, the former being in vastly greater proportion—namely, as 115 to only 16. Of these mediastinal abscesses it is sufficient to say here that tuberculous lesions of the glands and injuries by bullet and cold steel were the most common causes. Turning now to the smaller list of non-suppurative cases, to which my own case has the closer resemblance, we find the information as to causation is meagre. In 5 only out of the 16 is a cause (as such) mentioned: three times it was pressure on the chest, once erysipelas, and once pleurisy. But 5 are described as mediastino-pericarditis, in 3 others the pericardium was involved, and in 4 the pleuræ were either thickened, adherent, or contained liquid. Hare in his summary says that the exciting causes of this trouble are very much the same as those of the suppurative form, such as traumatism in all its varieties, sudden suppression of discharges of long continuance, or in some instances suppression of the menstrual flow. The two last causes I should accept with a good deal of reserve. It is also not clear how he comes to the conclusion that of the two possible terminations of this disorder—viz., resolution and fibrous thickening of the connective tissue of the space—the former is the more common, seeing that 15 out of the 16 cases which he records were fatal. The diseases of the mediastinum occupy one of the divisions of Nothnagel's "Special Pathology and Therapeutics" now in course of issue, and that portion of the work was published in 1896. It is by Professor Dr. F. A. Hoffmann. He divides the cases into three chief groups—those arising in extension from neighbouring organs, those due to metastasis in infectious diseases, and those due to injury. He does not admit cold and suppression of menses as causes. The comparatively small section of the work devoted to mediastinitis is largely or almost entirely concerned with the suppurative forms, which it would be obviously beside the mark to consider in detail here, and practically no advance is made by him beyond what can be got from Hare, from whom, indeed, he draws largely in the matter of abscess. Osler briefly alludes to it in his "Principles and Practice of Medicine" as a part of mediastino-pericarditis, on which subject he gives the results published by Harris, who appears to find that the amounts of pericardial adhesion and of mediastinitis are apt to vary in regard to one another, and that sometimes mediastinitis may exist without the pericardium being involved at all. In this case the term "mediastino-pericarditis" hardly seems justified. The symptoms, as mentioned by Osler, are referable to adherent pericardium and changes in the shape of the heart, but none are given which can be considered as due to the mediastinitis alone. I must allow that I have not seen the original paper.

Dr. G. A. Sutherland has published an interesting case[4] in which he diagnosed chronic mediastinitis. The patient, a child aged eight years, had dulness over the sternum, prominence of the veins of the arms and neck, puffiness of the face, and duskiness in the lips, cheek, and tongue, which were no doubt rightly ascribed to enlargement of the bronchial glands; and a pleuritic rub first heard over the sternum and then more to the side showed the extension of inflammation to the pleura, and hence presumably the intermediate implication of the mediastinal connective tissue. Here, of course, it may be an open question what is the importance of the mediastinitis apart from the tuberculous lymphadenitis. In relation to the work of Heidemann already mentioned it is extremely interesting to note that in Sutherland's case ascites was an early, if not the first, sign, and throughout a prominent feature of the case, and that the possibility of cirrhosis as a cause was under discussion but was rejected in favour of compression of the inferior vena cava in consequence of the mediastinal changes. This explanation, as I have shown, would not satisfy Heidemann, who looks to chronic peritonitis as the cause of the effusion. Sutherland admits in his case the existence of chronic peritonitis; but he thinks that it is the effect, and not the cause, of the ascites, and that it is not considerable because of the abundance of the fluid and the completeness with which the fluid has been evacuated at each tapping. However, if all the lesions in this case were secondary to the tuberculisation of the bronchial glands, the case differed in its essentials considerably from my own, and the others to which I have tried to liken it.

I will now turn to the question of the diagnosis or recognition of these cases—that is, the recognition of cases of combined adhesion of the pericardium and pleura with or without peritonitis. It seems a simple thing to say that if you can recognise adherent pericardium and adherent pleura you

[4] Clinical [Lecture on a Case of Chronic Mediastinitis, delivered at Paddington-green Children's Hospital on Dec. 13th, 1897, by G. A. Sutherland, M.D. Edin., M.R.C.S. Lond., THE LANCET, Jan. 8th, 1898, p. 87

can recognise the two together, but it is a matter of experience that you often cannot recognise either the one or the other. And so far as this group of cases is concerned it will be seen that in Heidemann's collected cases the thoracic conditions were partly masked by the condition of the abdomen; and in my own case one of my colleagues expressed the opinion that cirrhosis of the liver was an important factor; and, further, the right chest had been unsuccessfully explored to find fluid which was not there. After this the possibility of mediastinal changes chiefly at the lower part was made a question, to which I do not regard the mediastinitis, which was found, as being the response desired. Of course, it is well known that thickened pleura with the collapse of the lung which necessarily accompanies it will give the physical signs at the base of the chest which are too often regarded as the peculiar indications of liquid effusion. If there has been a history of pleurisy the diagnosis may be easy; if there is no such history, as in this case, and if, in addition, there are indications of disease in the heart or in the abdomen there are many other possibilities besides pleuritic adhesion and thickening which should give the physician pause.

As to adherent pericardium, in spite of the good work which has been done upon the subject it is obvious that it is often overlooked, and also that it is sometimes successfully diagnosed upon very inadequate grounds. I may especially remark here that the heart's impulse was in the normal position, that the impulse was not unduly forcible, and that the præcordial dulness did not extend beyond the left border of the sternum, so that no enlargement of the heart could be recognised, such as is present so commonly in association with adherent pericardium. Nor was there any retraction of spaces, to which, however, I attach very little importance, nor were there cardiac murmurs; nor was there, as I have already stated, any history of pericarditis or of diseases antecedent to it. The case, in respect of the pericardium no doubt falls within the group specified by Dr. John Broadbent,[3] in which the pericardial adhesion has a predominant effect upon the right heart and thus leads to its dilatation with all the other effects of stagnating circulation from this point backwards. In the absence of any lesion on the left side of the heart or of any pulmonary lesion competent to produce failure of the right ventricle the proofs of such failure would be suggestive of adherent pericardium; but obviously the difficulties of the diagnosis are very much increased if there is no history of previous acute pericarditis, and if there are pulmonary conditions, such as might result from disease of the left side and might even cause the dilatation of the right side. Here one might almost say the condition of diagnosing adherent pericardium on these lines was that adherent pleura should be diagnosed at the same time, or at any rate that the pulmonary lesion should be recognised as being neither the cause of the cardiac failure, as emphysema is of dilated right ventricle, nor the result of it, as red induration is of mitral disease. Indeed, a large part of the difficulty in recognising such cases may be said to consist in this—that the disease of one part cannot be considered on its own merits, because it is always open to the suspicion of being influenced by the disease in the others.

Then, lastly, can one take any account of the mediastinitis in the diagnosis? Can it be recognised? Can any particular symptom or group of symptoms be attributed to it? It occurs to me in this way—that from reasons of gravitation or otherwise the dropsy resulting from cardiac lesions is so constantly determined to the lower half of the body that a mediastinitis with adhesions or matting could only be suspected if the upper limbs or face or neck were quite exceptionally, or perhaps quite early, involved. This was not the case here. And yet there was one feature of the case which did turn our thoughts towards mediastinal mischief, when it was found that at the left base we had to do with solid and not liquid. And that circumstance was that three months before the patient's admission to hospital an adeno-myxoma had been removed by Mr. Lane from the left breast. However, this variety of tumour is not highly malignant, and, as a fact, it did not produce any secondary deposit in the chest as a cause of the symptoms found.

I think it will bring the subject to a fitting termination if I record another case in which a similar diagnosis may be made—that is, where pleuritic lesions are certainly present, where signs of cardiac failure are not explained by recognisable local evidence of cardiac disease, where nevertheless the pleuritic or pulmonary lesions are not such as to cause in themselves dilatation of the right ventricle, and where, finally, the implication of the pleura suggests a simultaneous and associated implication of the pericardium as the cause of the heart's incapacity.

A man, aged thirty-nine years, was admitted in February, 1898, suffering from cough, dyspnœa, and œdema of the legs. He had been in the army; he admitted having had gonorrhœa but denied that he had suffered from syphilis. His present series of illnesses began two and a half years ago. He suffered from cough, dyspnœa, and pleurisy in 1896 and was in the hospital; 24 oz. of fluid were drawn off; the liquid reaccumulated and 25 oz. were drawn off. His liver at that time reached to the umbilicus. He was again in hospital at the end of 1897 suffering from cough and dyspnœa. The breath-sounds and the voice-sounds were deficient at the left base and râles and rhonchi were present in both chests; the liver appeared to be enlarged, firm, and a little tender, but there was no ascites. The legs were very œdematous. The heart and the urine appeared to be normal. There was some rusty sputum but there were no tubercle bacilli. He got gradually better. Soon after Christmas, he again got dyspnœa and the legs began to swell and soon the abdomen, the scrotum, and even the hands slightly, followed suit. The edge of the liver was found in February, 1898, to be at the level of the umbilicus; the surface was uniform and smooth; the spleen came below the costal margin but there was no ascites. At the left base behind and in the left axilla there were dulness and diminution of breath-sounds and voice-sounds. The heart's movements could not be seen or felt; there was no retraction of spaces but there was slight epigastric pulsation; its dulness was normal and there was no murmur. Albumin was once discovered in the urine but it soon disappeared. Subsequently rubs were heard on the left side and some râles and rhonchi were always present. Three months after admission the patient was very much better; he walked about almost with comfort, but still presented inadequacy of his pulmonary bases, especially the left, bad expansion of the left chest, generally rather a quick pulse, absolutely negative character of the cardiac physical signs, the sounds being well heard, rather sharp, and approximated in quality and loudness. The liver and spleen were still large. He had not in the slightest degree the appearance of a man who had been addicted to hard drinking.

Of treatment little requires to be said; it is obvious that the most variable function is the capacity of the cardiac muscle, and practically the treatment resolves itself into that of a cardiac case by rest, diuretics, laxatives, and cardiac tonics. In the first case here recorded the treatment was absolutely of no avail. From the first and with scarce a temporary check the illness ran a downward course.

I will conclude with the following propositions:—(1) that while the combination of pleural and pericardial adhesions is by no means uncommon, a few cases are distinguished by features which render diagnosis somewhat difficult; (2) that some such cases form part of a larger group in which the peritoneum and mediastinal connective tissue are also involved in the inflammatory process; (3) that these features referred to are especially the prominence of the signs of past or present pleuritic changes and the insignificance of the local evidences of cardiac disease; (4) that such patients nevertheless do die chiefly from the incapacity of the heart, with increasing œdema and ascites, and this incapacity chiefly arises on the right side; (5) that in some cases peritonitis may have an important share in the fatal result; and (6) that in some cases ascites occurs as an early symptom and gives rise, with the passive enlargement of the liver, to suspicions of cirrhosis.

Wimpole-street, W.

[3] Adherent Pericardium, 1896, p. 43

A NEW infectious diseases hospital has just been opened at Huntingdon. Everything seems to have been done to make the building, which is the gift of Mr. J. A. Fielden, thoroughly efficient, but there is some dissatisfaction on the part of some of the ratepayers with regard to the site chosen.

PUBLIC HEALTH SERVICE IN SOMERSETSHIRE.—The recommendation of the special committee of the Somersetshire County Council advising the appointment of a county medical officer of health at a salary of £500 per annum has been deferred for further consideration.

UNCOMMON CASES OF OPERATION ON THE BRAIN.

BY JAMES H. NICOLL, M.B. GLASG.,

ASSISTANT SURGEON TO THE WESTERN INFIRMARY, GLASGOW; EXTRA SURGEON TO THE CHILDREN'S HOSPITAL, GLASGOW; CONSULTING SURGEON TO THE EAR HOSPITAL, GLASGOW; CONSULTING SURGEON TO THE LUNACY BOARD, GLASGOW, ETC.

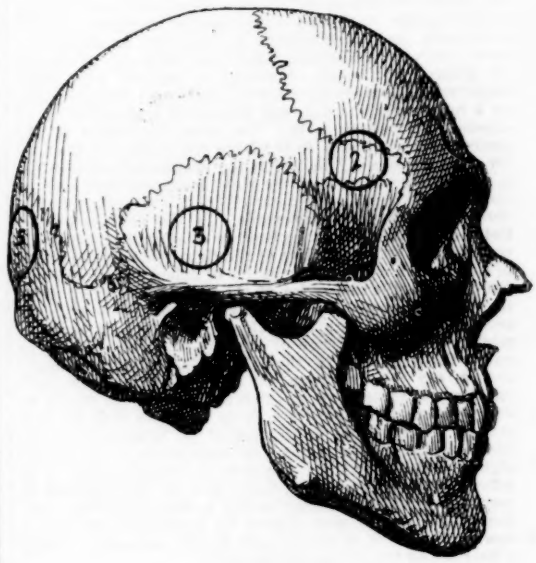
THE following three cases of operations on the brain present features somewhat out of the usual run of the ordinary intracranial operations, viz., those undertaken for abscess, sinus thrombosis, hæmatoma, and depressed fracture.

CASE 1. *Ligature of a cerebral artery for spontaneous hæmorrhage; patient nearly two years after operation in good health.*—A woman, aged sixty-two years, was sent into the Glasgow Western Infirmary by Dr. Bell Todd on Oct. 9th, 1896. Her history (as obtained from her two sons, her daughter, and a neighbour) was that she was always excitable and latterly had been much addicted to drink. One month previously she had suddenly in her house turned giddy and after staggering for a few minutes fallen unconscious. She was thought to be drunk and was placed in bed. For several days, however, she remained more or less unconscious. Then she gradually recovered, but for three weeks was in a dazed and stupid condition and "could not talk properly" (aphasia?). After that she appeared to be quite well for a week. Four days before admission, while going out, she again suddenly turned giddy and was found by a neighbour leaning against the wall of the entry. She was with difficulty got into her house and put to bed; by that time she was nearly unconscious. For three days she remained more or less unconscious and on the fourth day an acute epileptiform seizure occurred very suddenly. Dr. Bell Todd, who was hastily summoned, recognised the condition as one requiring operation and sent her at once into the infirmary. Being on duty at the time in Professor Macewen's wards I happened to see her on admission. Her condition was as follows. She was unconscious, but could be partially roused. Her pupils were equal, moderately dilated, and sluggish in reaction. There was no optic neuritis. At intervals of a few minutes there occurred violent epileptiform seizures. Each seizure began with a turning of the eyes and head to the right, followed by twitching of the right side of the head and neck. This was almost at once followed by violent twitching of the right arm and of the right lower limb. During the most severe seizures the left side of the body also became involved. The head was shaved and the patient was prepared for operation, which took place about an hour after admission. Over the motor area I removed successive portions of the skull to the extent of about 5 square inches in all. A large clot lay on the surface of the brain and there was also smart fresh hæmorrhage from the lower and anterior part of the exposed area. After removing the clot I tied the middle meningeal in the dura mater. The hæmorrhage still continuing I removed a further portion of bone in the direction from which it proceeded and exposed a cavity in the cerebral cortex of about the size of a pigeon's egg. This was lined by greyish shreddy material resembling partially bleached old blood-clot. From the lower side of this cavity an artery was spouting across the cavity. This I tied with a fine ligature. All the bone removed was replaced with the exception of one part. The wound healed rapidly, the bone uniting firmly. For several weeks she remained stupid and irritable and markedly aphasic. She ultimately was dismissed well. At present she is well in every way except in so far as that there is a gap in the skull about 1 in. square, and near it an area of skull, corresponding with that removed and replaced during the operation, which is irregular and flattened. The patient was brought before the Glasgow Medico-Chirurgical Society in November, 1897.

The artery tied appeared to be the ascending frontal branch of the middle cerebral. As to the nature of the cavity into which it was bleeding it seems an open question whether (*a*) it may have been an aneurysm which partially ruptured on the occasion of her first attack of giddiness and finally ruptured a month later, or (*b*) was produced by tearing of the brain by hæmorrhage from the ruptured artery. In either case the shreddy material on its walls appeared of much earlier date than the large clot on the brain surface, suggesting a date of origin probably contemporaneous with the date of the attack of giddiness one month before admission. The large black clot on the brain surface, on the other hand, seemed of recent origin, and in all likelihood originated at the time of the second attack of giddiness four days before admission. Whatever the exact explanation the rupture would seem to have been spontaneous. No evidence of fracture could be found nor did the shaven scalp reveal any bruising. The history also bears out this opinion.

CASE 2. *Acute symptoms of intracranial pressure due to distension of the lateral ventricle and relieved by draining; the patient at the present time well.*—A man, aged twenty-one years, on June 29th, 1897, while carrying a heavy iron casting on his shoulder tripped and fell. His forehead struck the ground, while his skull at the same time received a blow behind near the occipital protuberance from the piece of metal on his shoulder. This was followed by smart epistaxis and a condition of concussion which lasted for some hours. For a fortnight he was confined to bed suffering from headache, recurrent epistaxis, and giddiness. Over the junction of the nasal and frontal bones anteriorly, and over the occipital bone posteriorly, there was tenderness and in the latter situation there was some swelling for a time. At the end of the fortnight he gradually

FIG. 1.



within a few days regained his normal condition, and for about two months was fairly well except that he occasionally felt giddy when stooping and had occasional epistaxis. On Oct. 15th, three and a half months after the accident, his condition changed. He suffered from severe pain in the right frontal region, marked giddiness, and a tendency to frequent vomiting. These symptoms increased in severity till Oct. 25th when I saw him in consultation with Dr. John Barr Stevens. At that time his condition was, briefly, as follows. His temperature was practically normal and his pulse was 62; there was severe and constant pain in the right frontal region. The slightest movement, even turning the head on the pillow, produced instant giddiness and frequently resulted in vomiting. The patient appeared to be dull and lay very still, possibly more from the desire to avoid the giddiness and vomiting consequent on any exertion than from commencing coma, though Dr. Stevens, who had full opportunity of observing his condition, is of opinion that at this time there was a tendency to stupor and commencing coma. His speech was slow and hesitating. There was no paresis or spasm of the face, arms, or legs. There was no optic neuritis. His nasal bones were loose and "rocking" on the frontal bone. On Oct. 28th, his condition being

unchanged except that there was distinctly more stupor, I decided to explore the interior of the skull for the source of pressure. There being present only *general* symptoms of intracranial pressure, without any definite *localising* evidence, I was guided in my decision to explore the frontal region by the presence of pain there and by the loose condition of the nasal bones. Discs of bone 1 in. in diameter were removed from the sites marked (1) and (2) in Fig. 1. The dura mater in both places presented no bulging and pulsated normally. In both sites the dura mater was incised and the brain explored to the depth of 1½ in. by means of Macewen's cannula with negative result. The effect of the operation was a slight diminution of pain and giddiness for a few days, after which the patient relapsed into his former condition with deepening stupor. On Nov. 9th I again saw him with Mr. W. G. Stevens and Dr. J. B. Stevens and decided to explore further. I removed a 1 in. disc of bone in site 3 in Fig. 1 and found the dura mater over the temporo-sphenoidal lobe bulging and pulseless. On incising it the subjacent cortex appeared to be pale, pulseless, and bulging. Exploration with the cannula in three different directions to the extent of 1 in. and 1½ in. gave no result, but on pushing the cannula in the direction of the ventricle it entered that cavity and evacuated a considerable quantity of fluid, the amount of which, however, could not be ascertained. With the object of discovering the possible source of this distension of the ventricle, in the shape of abscess, hæmatoma, or tumour pressing on the veins of Galen, I removed 1 in. discs of bone in site 4 over the cerebellum and site 5 over the occipital lobe and explored both cerebellum and occipital lobe with the cannula. The result was negative. From that date the patient made an uninterrupted recovery and is now well. He was shown to the Glasgow Medico-Chirurgical Society in March, 1898.

Three things have induced me to think the case of sufficient interest for publication. 1. The diagnosis. It is not uncommon for acute distension of one or both lateral ventricles to follow from blocking of the veins of Galen, the result of the presence in the cerebellum or occipital lobe of abscess, hæmatoma, or tumour. In this case, however, both the subsequent negative exploration of the cerebellum and occipital lobe and the patient's perfect recovery go to exclude that possibility. Amongst the various possible explanations of the distension of the ventricle perhaps the most probable in this case is that the vein of Galen draining the right ventricle was obstructed by thrombosis originating in some way from the injury received at the time of the fall. 2. The extent of the cerebral exploration carried out. Though not the most extensive exploration of the encephalon I have carried out it is the most extensive exploration of one hemisphere I have yet had to undertake, and when it is recollected that from each of the five trephine apertures the cannula was passed in 2 or 3 directions into the brain for distances varying from 1 in. to 2 in. it will be seen that the interference with the brain was considerable. As consulting surgeon to the Glasgow Ear Hospital, when on duty in Professor Macewen's wards in the Western Infirmary, and in private practice I have frequently had occasion to explore the temporo-sphenoidal lobe and cerebellum on one side and in some cases, in addition, the occipital lobe. In several cases which have been under my care I have explored one or other, or several, of these sites on both sides. In this case, however, there has been added the not very common exploration of the frontal lobe. Practice has advanced with great rapidity of late years in cerebral cases. There must be a limit to interference with the brain. With a knowledge of the anatomy of the brain and strict asepsis, however, it is not yet clear where the limit of successful interference with the brain is to be placed. 3. The method of dealing with the discs of bone removed. Much has been written, and opinions widely differ, as to the best method of dealing with bone removed from the skull in the matter of providing the most efficient protecting covering for the brain. The principal methods advocated are: (*a*) leaving the bone removed unreplaced on the ground that if replaced it either necroses or undergoes absorption. In this method the brain is protected by the dura mater, pericranium, and scalp fused together. (*b*) Breaking up the discs removed into small portions and implanting these on the sutured dura mater in the gap. In this method these portions of bone are said to grow and firmly fill the gap. (*c*) Splitting the disc into two lamellæ and replacing one only. The supporters of this method assert that the thin lamella of half the thickness of the disc is more easily vascularised and therefore less likely to necrose than the thicker plate formed of the entire disc. (*d*) Replacing the entire disc. In this case I followed the method I have always practised—viz., replacing the entire disc. In this case the discs were not even kept in warm solution. They were laid between folds of dry sterilised gauze till the operation was over, then replaced, and the scalp was sutured over them. The wounds healed by first intention under the original dressing. At the present time all five discs are, four months after operation, firmly united *in situ*.

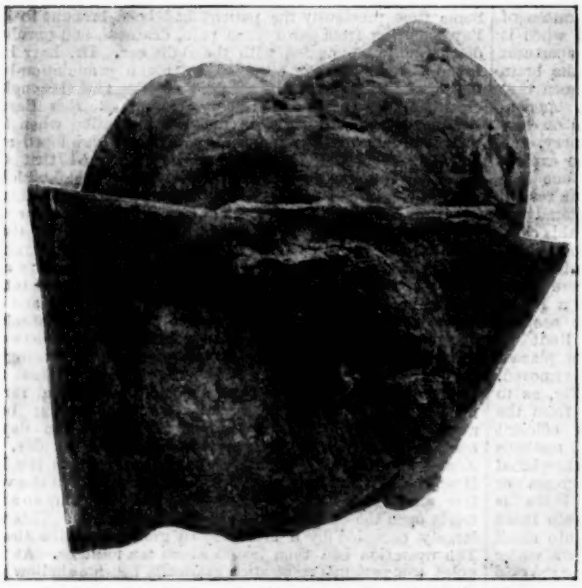
With the two objections urged against replacing the entire discs—viz., the risks of necrosis during healing and of remote absorption—it is not easy to deal without some knowledge of the circumstances in which these untoward results have occurred. I have not seen absorption occur, and I have lately inspected three cases where the entire disc had been replaced ten, seven, and six years ago respectively. In none of these can I detect any evidence of absorption. It is not easy to follow up one's cases, however, more especially hospital cases, and in the meantime, until I have been able to extend my observations, I should wish to reserve final judgment. Whether subsequent absorption of the disc, granting it to be at all common, constitutes any argument against replacing it is another matter. It would appear that what remains of the absorbed disc uniting with the fused dura mater and pericranium should tend to increase the protecting covering of the brain. Necrosis of the replaced disc is also an occurrence of which I have had no personal experience. In a now very considerable number of cases I have not, if I may trust my notes and memory, seen it once. In the records of cases in which it has occurred and in the observations of certain writers there is evidence that the main, if not the only, cause of necrosis of the disc is sepsis. Should anything be permitted to interfere with the strictly aseptic condition of such a wound it could hardly be matter for surprise should necrosis of the disc result.

CASE 3. *Malignant tumour of the brain originating in the middle ear; symptoms simulating temporo-sphenoidal abscess; removal of intracranial portion of the tumour, with relief of pressure symptoms; death two and a half months after operation.*—On May 18th, 1897, I saw the patient, a boy, aged twelve and a half years, with, and at the request of, Dr. Barr, senior aural surgeon of the Glasgow Ear Hospital. The symptoms were persistent vomiting, pain on the right side of the head, subnormal temperature, slow pulse, drowsiness, stupor, and steadily developing coma, right optic neuritis, dilatation of the right pupil, paralysis of the right third and fourth nerves, and paresis of the left sixth nerve. Some time previously the patient had been brought to Dr. Barr suffering from paroxysmal pain, deafness, and purulent discharge in connexion with the right ear. Dr. Barr had found the middle ear occupied by tough granulation-like tissue, and had opened the mastoid cavities and thoroughly cleared both these and the tympanum of this tissue. Portions of this tissue were under examination when the serious intracranial symptoms above detailed developed and Dr. Barr requested my coöperation. We agreed that the symptoms indicated a lesion in the temporo-sphenoidal lobe. As to the nature of that lesion we were also at one in thinking it probably an abscess and not a tumour and this for the following reasons: (*a*) the boy had, and had had for three months, the most common exciting cause of intracranial abscess in the form of a purulent otitis; (*b*) the rapidity and progressiveness of the development of the symptoms of intracranial lesion, a matter of five or six days in all; and (*c*) apart from these considerations the symptoms themselves afforded no sufficient evidence on which to decide between the two probabilities—abscess and tumour. That being so it was natural to think it more probable that the lesion was the common one, abscess, and not a rarity in the shape of a malignant tumour causing both aural and intracranial symptoms. Later in the day I operated along with Dr. Barr and assisted by Mr. F. Adams and Dr. J. G. Connal, assistant surgeons to the Ear Hospital. In the first place I still further enlarged the very free mastoid opening previously made by Dr. Barr so as to freely open the bony channel of the sigmoid sinus. This was largely occupied by a firm greyish granulation-like tissue. The operation had then lasted about ten minutes. At this point the patient's respiration gradually became shallow and finally ceased. The pulse remained perfectly good. The patient was evidently in a condition of apnœa from cerebral pressure. Artificial respiration was begun. No stimulant

FIG. 2.

External view, showing fungating extensions of the recurrent growth through the operation opening in the skull.

FIG. 3.



Internal view, showing extension of neck of growth from middle ear through petrous bone.

was given nor was the foot of the table raised. After some minutes I performed tracheotomy on the suggestion of the chloroformist, Dr. Connal, who found this an aid to artificial respiration. For over one hour the patient's condition remained unchanged. So long as artificial respiration was kept up the pulse and colour remained good, but on stopping the artificial respiration from time to time there was not the faintest attempt at spontaneous breathing. It was then decided to open the skull at all hazards and explore the temporo-sphenoidal lobe. This I did while artificial respiration was still being carried on. On removing a large trephine crown of bone, about 1½ in., directly over the external auditory meatus the dura mater bulged markedly. In the dura mater I made a crucial incision. The cerebral cortex bulged at once in the opening, evidently under great pressure. At this point, one hour and ten minutes after the breathing had failed, the first faint effort at spontaneous respiration occurred. I explored the temporo-sphenoidal lobe with the trocar. No pus was got, but at a short distance under the cortex a hardish mass was detected. I divided the cortex and displaced it to either side and exposed a firm greyish mass of tissue similar in appearance to that which had been exposed in the groove of the sigmoid sinus. With a small elevator a portion of this was removed. The patient was now breathing regularly and there had occurred a marked contraction of the previously dilated right pupil. I enlarged the aperture in the skull by means of gouge forceps and removed a considerable portion of the intracranial tumour. This was readily distinguished by the sense of touch from the soft brain around. After evacuating the larger part of the then intracranial portion of the growth it became clear that the tumour sprang from and widely permeated the petrous bone. I therefore gave up the attempt to remove more and applied an aseptic packing and dressing. By this time the patient, to whom no chloroform had been administered from the time apnœa set in, was moaning and struggling to get at our hands working at his head. For some days the symptoms were relieved, the headache, drowsiness, and vomiting having ceased. After that time, however, the headache returned—as formerly, more marked in the right side—and the right pupil was again dilated. At the end of a fortnight optic neuritis occurred in the left eye, rapidly followed by atrophy and blindness. Soon after this the left side of the face became paralysed and this was followed by paresis of the left arm. During the two and a half months he survived the operation there was no return of the semi-comatose condition developing before the operation and on only one occasion was there any return of the vomiting. On two occasions towards the end of the first month I shaved off portions of the growth which had fungated through the large cranial opening and were giving rise to hæmorrhage. On June 18th, a month after the operation, he was removed home to Saltcoats and the further report is by Dr. Campbell, whose patient he was. Dr. Campbell notes on June 19th: "Hearing, taste, and smell perfect. Intellect clear. No pain. Temperature normal. Complete blindness. Paralysis of left side of face and of left arm." For the following six weeks his condition varied little, except that the old pain in the head occasionally returned, and on one occasion he had a recurrence of the vomiting. About a week before death he became gradually completely deaf. Four days before death drowsiness returned and gradually merged into coma with a steadily rising temperature, which just before death, on August 2nd, reached 107°. The specimen (of which photographs are reproduced) was exhibited in the Museum of the British Medical Association meeting in Edinburgh, July, 1898.

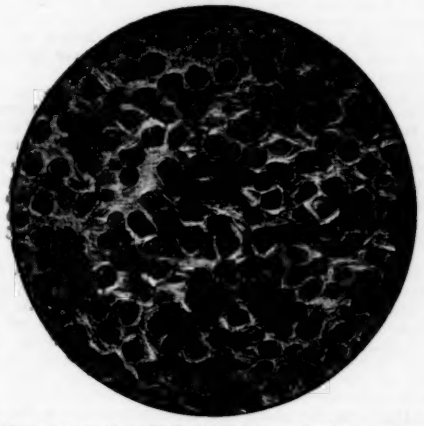
The two points of interest in the case are—(1) the apnœa (probably produced by the action of the chloroform on a brain the site of steadily developing pressure coma) and the almost dramatic immediate relief of both apnœa and coma

FIG. 4.

Microphotograph by Dr. Leslie Buchanan, showing structure of growth under low (× 150) power.

following the shelling-out of the then intracranial portion of the growth; and (2) the nature of the growth, on which it appears a little difficult to obtain any unanimity

FIG. 5.



Microphotograph by Dr. Leslie Buchanan, showing structure of growth under high (× 300) power.

of opinion amongst the pathologists consulted, several favouring soft carcinoma and several alveolar sarcoma. The accompanying illustrations (Figs. 2, 3, 4, and 5) give a fair idea of the size and structure of the tumour.

Glasgow.

NORTH-EASTERN HOSPITAL FOR CHILDREN, SHOREDITCH.—A complete Roentgen rays apparatus has been presented to the North-Eastern Hospital for Children, Hackney-road, Shoreditch, by the Duke of Newcastle, who is a member of the committee. The apparatus, which was made by Mr. J. Le Couteur, throws an 18-in. spark, and is in every way an efficient adjunct to the clinical work of the hospital.

FREEMASONRY.—At the regular monthly meeting of the Chaucer Lodge, No. 1540, held at the Bridge House Hotel, London Bridge, on Monday, Oct. 24th, Bro. Heinrich Oppenheimer, M.D. Heidelberg, M.R.C.P. Lond., was duly installed W.M. The banquet which followed the ceremony was largely attended and an enjoyable evening was spent.

SUMMARY OF GUNSHOT WOUND CASES TREATED IN NO. 2 NATIVE GENERAL HOSPITAL AT RAWAL PINDI.

BY CAPTAIN D. M. MOIR, I.M.S., M.B., C.M. EDIN.,
REGISTRAR NO. 2 NATIVE GENERAL HOSPITAL.

THIS hospital of 500 beds was mobilised for about a period of six and a half months, from the middle of October, 1897, to the end of April, 1898. It received sick and wounded from the field hospitals in the Tirah expedition, who were transferred through the native general hospitals at Kohat or Naoshera. Altogether 2946 patients were treated, of whom 1453 were fighting men and 1493 followers. Of this number only 309 were surgical cases, 233 being fighting men and 76 followers. There were no deaths among the surgical cases, whereas the mortality from disease amongst the remaining 2637 patients was 89, 11 fighting men and 78 followers died. The nature of the surgical cases was as follows:—

Injuries.*	Fighting men.	Followers.	Total.
(*g*) Burns and scalds	1	5	6
(*a*) Contusions	10	12	22
(*c*) Wounds	5	19	24
(*d*) Gunshot wounds	193	28	221
(*b*) Sprains	11	2	13
(*p*) Dislocations	1	—	1
(*k*) Fracture of skull	1	—	1
(*j*) Abrasions	6	1	7
(*n*) Fracture of other bones ...	5	9	14
Total	233	76	309

* The classification used in Army Hospital Forms 80 and 81 is here adopted.

This paper deals with the 193 cases of gunshot wounds amongst native officers, non-commissioned officers, and men. It was not an easy matter to ascertain accurately the locality or engagement at which the men were wounded, partly owing to their vague replies, but chiefly on account of this information not being supplied in the papers accompanying them. However, as far as could be gathered the following are the places at which the wounds were inflicted:—Dargai 50, Tirah (vague) 55, Maidan in Tirah 20, Kuki Khel in Tirah 2, Tabai in Tirah 2, Bagh 12, Charbagh 1, Kharappa 8, Bara Valley 7, Saransar 6, Waran 5, Dwatoi 5, Mastura 3, Shinawari 2; Asmar, Shabkadr, Gulistan, Samana, Sampagha, Kai, Karmana Dara, Sadda, each 1. Also 1 man was wounded near Kohat and another near Khusalgarh, and 5 were "unknown." Particulars as to the nature of the projectile or of the weapon used could be obtained in only a small number of the cases. All that inquiry and examination could elicit was that 16 of the wounds were caused by the old-fashioned round or spherical bullet, 12 by the Martini-Henry, 11 by the Lee-Metford, 11 by the Snider, 1 by a cavalry carbine, and in the remaining 142 cases no reliable data could be got.

Medical officers at the front and on the lines of communication have their hands full; but still it would not increase their work much, and it would add very much to the interest of the cases, if printed forms were supplied in which they might jot down the following data while events were fresh in their minds. The forms might contain such headings as: (1) place or action at which wound was received; (2) nature of weapon or projectile; (3) nature of injury; (4) approximate distance at which the shot was fired, also the direction from in front, behind, above, &c.; (5) attitude of patient at the time he was struck, whether he was running, standing, lying down, &c.; and (6) any other facts of interest. Of course, such information could not be obtained in all instances, but it would be forthcoming in many cases, and thus valuable knowledge as to the effects of different projectiles at varying ranges in actual warfare could be collected.

The Gurkha and Sikh regiments supplied the greatest number of wounded; no less than 157 out of 193 belonged

to these corps. There were 101 wounded Gurkhas from the 2nd Battalion 1st Regiment, 1st Battalion 2nd Regiment, 2nd Battalion 2nd Regiment, 1st Battalion 3rd Regiment, 2nd Battalion 4th Regiment, 1st Battalion 5th Regiment, and 2nd Battalion 5th Regiment. The 1st Battalion 2nd Gurkhas and the 1st Battalion 3rd Gurkhas suffered most severely, there being 49 from the former and 35 from the latter. The 3rd, 15th, and 36th Sikhs furnished 56 wounded, the last two corps in nearly equal numbers—24 and 29. Native cavalry regiments and mountain batteries each added 5 to the total of wounded and the remaining 26 came from the Bombay Sappers and Miners, 28th Bombay Pioneers, 21st Madras Pioneers, Jhind Infantry, 2nd Punjaub Infantry, 12th B. I., and 22nd Punjaub Infantry.

LEE-METFORD BULLET WOUNDS.

The cases of wounds from the Lee-Metford bullet[1] make rather an interesting series and they tend to confirm previous experience regarding its relative harmlessness (so long as a bone is not struck) as compared with the damage done by most other projectiles used in modern warfare.

CASE 71. *Gunshot wound of the chest, IV., 5.*—The patient (15th Sikhs) was wounded in Tirah on Nov. 9th, 1897, by a Lee-Metford bullet fired from behind him. The bullet entered on the left side of the back of the chest just below the lower angle of the scapula and internal to it through the seventh costal space. It traversed the lung and emerged in front through the second left costal space 3 in. above the nipple and 1 in. internal to the left mammary line. He fell down immediately on being hit and there was considerable hæmorrhage from the wounds and from the mouth. Air also escaped from the wounds and there was emphysema of the tissues surrounding them. The treatment consisted in antiseptic dressing and strapping of the chest, with the free administration of opium. The wounds, which were both very small, round, and of equal size, healed up in a fortnight. He was received at Rawal Pindi on Dec. 1st with the wounds soundly healed, but he complained of occasional pain in the chest on the side affected and also of a slight cough. No marked dulness could be elicited on percussion and the breath sounds were normal on auscultation. On Dec. 24th he was given three and a half months' sick leave. This man had a marvellous escape because, though the bullet entered below the level of the root of the lung and its main vessels, yet it traversed the whole thickness of the lung and emerged in close proximity to the great vessels at the base of the heart.

CASE 48. *Gunshot wound, XV., miscellaneous (pelvis).*—The patient (1st Battalion 3rd Gurkhas) was wounded at Dargai on Oct. 18th, 1897, by a Lee-Metford bullet, which struck him in the cleft between the nates over the lower end of the sacrum and passed forwards and outwards to emerge a little above and in front of the great trochanter of the right femur, its track being quite 10 in. long. The impact of the bullet knocked him down and he was carried to camp in a dhoolie. In his medical certificate it was stated that the right os innominatum was fractured, but all evidence of this was gone when he arrived here on Nov. 14th. The scars of the apertures of entrance and exit were very small and both were about the same in size and shape. In spite of the long 10 in. track the wound was healed in a fortnight. He was discharged to duty at his regimental depôt on Nov. 29th.

CASE 28. *Gunshot wound of the neck, III., 2, with injury to the cervico-brachial plexus.*—The patient (15th Sikhs) was wounded on Oct. 18th, 1897, at Dargai, by a Lee-Metford bullet which hit him on the back of the neck 1 in. to the left of the middle line on a level with the upper and inner angle of the scapula. It passed forwards and outwards, emerging about 2 in. above the middle of the left clavicle. When admitted here on Nov. 9th both wounds were healed and the resulting scars were very small; that of the exit wound was the smaller of the two. In this case also the wound was healed in a couple of weeks. He complained, however, of pains shooting down his left arm and up the side of his neck and head, the pain being worst at night. It is probable that the bullet in its passage through the neck injured some of the nerves. He was discharged to his depôt on Nov. 29th, but still complained of pain in his neck and arm.

CASE 133. *Gunshot wound, VII., perineum, &c.*—The patient (28th Bombay Pioneers) was wounded at Dwatoi on Dec. 9th, 1897, by a Lee-Metford bullet, which entered immediately to the left of the root of the penis and emerged at the outer side of the right buttock an inch and a half above the fold of the nates, traversing the perineum. Apparently neither the urethra nor the bladder were injured nor was the pelvis fractured. On Dec. 21st, when he was admitted here on transfer, the wound was completely healed and he was discharged to duty at his depôt three days later. In this case an extensive wound, very liable to septic contamination from its situation, was healed in less than two weeks.

CASE 182. *Gunshot wound in the back, VI., 1.*—The patient (15th Sikhs) was wounded on Nov. 9th, 1897, at Maidan by a Lee-Metford bullet while he was lying down. It entered the right side of the back a little below the level of the iliac crest and came out about the corresponding place on the left side, having a long course through the left tissues without any apparent injury to bone. An abscess formed later and pus was evacuated through an incision midway between the two wounds. On admission here (Jan. 22nd, 1898) all three wounds were nearly healed. Early in the first week of February the wounds were healed, but he had been suffering much from malarial fever and debility. On Feb. 15th he was sufficiently well to be sent on six months' sick leave to his home.

CASE 134. *Gunshot wound in the lower extremity, IX., 1.*—The patient (28th Bombay Pioneers) was wounded in Tirah on Dec. 10th, 1897, by a Lee-Metford bullet which entered the inner aspect of his right thigh at the junction of its middle and lower thirds. It passed upwards and backwards through the whole thickness of the thigh and escaped 2 in. below the fold of the nates. When transferred here on Dec. 21st both wounds were almost healed and were very small and round. There had been no suppuration nor had there been any injury to bone or important structures. The wound was quite healed within a fortnight of its infliction and the patient was discharged to duty at his depôt three days after admission.

CASE 142. *Gunshot wound in the lower extremity, IX., 1.*—The patient (36th Sikhs) was wounded in the retirement from Bagh on Dec. 12th, 1897. A Lee-Metford bullet struck the front of his left thigh 8 in. below the anterior superior iliac spine, passed to the inner side of the femur, and came out at the same level on the back of the limb without injuring any important structure. On admission here (Dec. 21st) both wounds were very small, round, punched out and were healing well. By Jan. 17th, 1898, they were firmly healed.

CASE 155. *Gunshot wound in the lower extremity, IX., 1.*—The patient (1st Battalion 3rd Gurkhas) was wounded in the left leg on Dec. 13th, 1897, in Tirah. A Lee-Metford bullet entered a little above the middle of the leg, 1 in. external to the edge of the tibia, and passing backwards and downwards it emerged in the middle of the calf. On admission here (Dec. 21st) the wounds were very small and were healing satisfactorily. By Jan. 11th, 1898, the wound was soundly healed and the man was discharged to duty at his depôt next day.

CASE 145. *Gunshot wound in the upper extremity, VIII., 1.*—The patient (36th Sikhs) was wounded in Tirah on Dec. 11th, 1897, by a Lee-Metford bullet, which struck the right arm just in front of the deltoid insertion, passed to the outer side of the humerus and came out behind at the same level. On admission here (Dec. 21st) both wounds were small, round, clean, punched out and healing well. By Jan. 4th, 1898, they were healed thoroughly.

CASE 146. *Gunshot wound in the upper extremity, VIII., 1.*—The patient (Jhind Infantry) was wounded at Dwatoi on Dec. 10th, 1897, by a Lee-Metford bullet fired from behind him. It entered at the back of the right arm about 1 in. below the deltoid insertion, passed upwards, and came out just below the acromion process without injuring bone or joint. On admission here (Dec. 21st) both wounds were quite healed—i.e., within twelve days of the injury. His head must have been turned to one side when he was hit, otherwise it could scarcely have escaped being struck.

CASE 166. *Gunshot wound in the upper extremity, VI_I., 1.*—The patient (1st Battalion 3rd Gurkhas) was wounded in Tirah on Dec. 18th, 1897, by a Lee-Metford

[1] I have condensed the following abstracts of cases from the case-books of medical officers in charge of the sections of the hospital. Accordingly, I am indebted to Captain W. H. Gray, Captain H. B. Melville, Captain S. H. Burnett, Captain B. G. Seton, Captain T. W. A. Fullerton, Captain J. S. S. Lumsden, and Captain H. Burden, also to Lieutenant C. B. Harrison and Lieutenant J. M. Woolley, for their notes. The classification adopted is that of Army Form A 7, which needs revision, as I pointed out in an article which appeared in the Indian Medical Gazette for June, 1898.

bullet, which struck the right forearm 3 in. above the wrist. It entered over the inner edge of the ulna, passed in front of both bones, and emerged on the outer side of the radius 2 in. above the wrist, thus crossing the point of the forearm obliquely without injuring the bones. On admission here (Dec. 21st) both wounds were merely small round ulcers. On Jan. 1st, 1898, there was loss of power in the hand and the movements of the fingers were defective both as regards flexion and extension. Although the power of opposition of the thumb was unimpaired, yet he could not hold or lift anything firmly in his hand. On March 12th there was some improvement, but the hand was still weak and movements were impaired. On the 31st prognosis was unfavourable, so he was sent to his depôt to appear before an invaliding board.

While describing these 11 cases of Lee-Metford bullet wounds I may as well complete the dozen by mentioning one which came under my treatment from the beginning at the Followers' Cantonment Hospital, Rawal Pindi. It is interesting in that it tends to show that a Lee-Metford bullet had not apparently sufficient force to perforate completely both the forearm and leg of a thin and feeble native at some distance less than 2000 yards. It is also an example of wounds healing in a couple of weeks or less.

A man, aged thirty years (a grass-cutter), was shot by a Lee-Metford bullet while squatting and cutting grass behind one of the rifle ranges when firing was going on. The bullet struck his naked arm and leg, which were thin and poorly nourished. It passed through the fleshy part of the back of his right forearm and then entered the outer side of his right calf and lodged just under the skin on the inner side. This happened on March 29th, 1898. He was brought to hospital the same day and the bullet was at once extracted through a skin incision over it. On admission the man was not suffering from shock and he was able to stand, though he did not attempt to walk then. However, he was caught walking about within a week of the accident. The wounds in the forearm were healed on the ninth (exit) and tenth (entrance) days. The incision in the leg was healed on the eleventh day and the wound of entrance healed on the sixteenth day, this last having been retarded by slight suppuration. In the opinion of the officer commanding the regiment and from the evidence at a court of inquiry it would appear that the grass-cutter was hit about half a mile behind the butts and that the company at practice began firing at 1100 yards and advanced up the range towards the butt. Therefore the shot may have been fired at a distance much less than 1100 yards but allowing the maximum distance of 1100 yards from the firing point to the butt and of 880 yards behind the target, yet the total comes to less than 2000 yards and the bullet had not had sufficient force to perforate completely the arm and leg of a poorly-developed native. It may be objected, however, that the shot was a ricochet and that part of the force and velocity were expended on some other object before the man was struck. Against this is the fact that the bullet was absolutely unaltered in shape—it had not the least scratch, flattening, or indentation on its surface.

WOUNDS FROM SPHERICAL BULLETS.

Passing next to consider the effects of the old-fashioned round ball we find they make a sharp contrast with those of the Lee-Metford as detailed above.

Effects of spherical bullets.—(1) Mostly lodged, requiring an operation for extraction; (2) suppuration usual from the bruising of the tissues and the introduction of septic foreign bodies, hence sinuses and slow healing; (3) fractures and injuries of important structures common; and (4) course of bullet tract often tortuous.

Effects of Lee-Metford bullets.—(1) Did not lodge (except in the last case), hence much less subsequent manipulation of the wounds; (2) much less tissue injured, cloth, &c., not carried into the wound, hence rapid healing often without suppuration; (3) bones and important structures escaped injury in a wonderful way; and (4) course of bullet track usually straight.

CASE 49. *Gunshot wound in the upper extremity, VIII., 2.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai on Oct. 20th, 1897, by a spherical bullet which struck him on the deltoid muscle just above the right shoulder joint, and passed inwards and forwards under the clavicle, lodging about 4 in. or 5 in. from the wound of entrance. It fractured a portion of the outer end of the clavicle and also the acromion at the acromio-clavicular joint. Some pieces of bone were extracted shortly after he was injured. When he was admitted here on transfer (Nov. 14th) he was suffering great pain in the shoulder and neck; there was a copious discharge of thick pus from the wound and the temperature ranged between 100°F. in the morning and 102° in the evening. On Nov. 18th under chloroform the wound was enlarged and explored and a spherical bullet was felt lying in the neck 4½ in. from the entrance, but it could not be extracted until a counter-opening was made just above the supra-spinous fossa. This incision served the double purpose of allowing of the removal of the projectile and also of providing free drainage. The capsule of the shoulder-joint was not injured. The bullet was a round one, about five-eighths of an inch in diameter, weighing half an ounce On Dec. 12th the counter opening had healed. On Jan. 20th, 1898, the primary wound was closed. On the 27th the patient was sent home on three and a half months' sick leave.

CASE 83. *Gunshot wound in the upper extremity, VIII., 2.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai on Oct. 20th, 1897, by a spherical bullet fired from above him. The wound of entrance was immediately over the tip of the right acromion process. On admission here (Nov. 9th) there was considerable antero-posterior thickening over the head of the humerus, with fulness in the axilla and induration of the soft parts of the upper half of the arm. This led to a suspicion that the bullet had entered the shoulder joint; but when the patient was put under chloroform on the 22nd it was found that the bullet had fractured the spine of the scapula and was lodged in the infra-spinous fossa. The aperture in the spine of the scapula had to be enlarged in order to admit of the removal of the bullet as well as of a piece of khaki cloth (from his coat) which was one inch long, half an inch broad, and in two layers. In spite of antiseptic precautions and good drainage profuse and prolonged suppuration supervened. It was not till April 9th, 1898, that he was made over to his regiment, at which time there was a small sinus less than an inch long and also a good deal of stiffness of the joint from extra-capsular adhesions.

CASE 39. *Gunshot wound in the upper extremity, VIII., 1.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai by a spherical bullet. On admission here on Nov. 12th, 1897, there was a small wound at the posterior and lower margin of the right deltoid only half an inch deep. There was no wound of exit and there were no signs of the bullet. By the 22nd the wound was healed, but a day or two later he complained of pain on raising the arm. On the 26th a hard lump could be felt at the edge of the latissimus dorsi. Cocaine solution was injected, the lump was cut down on, and a round bullet was readily shelled out. Evidently this bullet had altered its position and come nearer the surface while he was under treatment, because no sign of it was perceptible on manipulation when he was admitted or during most of the time he was in hospital.

CASE 8. *Gunshot wound in the upper extremity, VIII., 1.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai by a spherical bullet which grazed his left upper arm, entering over the inner side of the biceps. It passed under the skin and emerged 2 in. lower down. The wound was healing well on his admission here (Nov. 3rd, 1897) and he was fit to be discharged to duty at his depôt ten days later.

CASE 82. *Gunshot wound in the upper extremity, VIII., 4, ulna.*—The patient (1st Battalion 3rd Gurkhas) was wounded at Shinawari on Nov. 18th, 1897, by a spherical bullet, which struck the back of his right forearm midway between the elbow and the wrist, fracturing the ulna, and then lodged. The ball was extracted the same day through an incision on the front of the forearm 1 in. below the bend of the elbow. No bone was then removed and no fragments have since come away. The elbow joint was not injured, but the movements of pronation and supination were somewhat impaired. On admission here (Dec. 3rd) the wounds were merely small ulcers, but a sinus persisted, discharging a thin watery fluid, and a fragment of dead bone was suspected. On Jan. 18th, 1898, under chloroform the sinus was slit up and a small sequestrum was removed as well as half-a-dozen strands of wool from a cardigan jacket. On March 2nd prehensile power and movement had greatly improved. The wound healed some time ago. The patient was sent on six months' sick leave.

CASE 83. *Gunshot wound in the neck, III., 1; upper extremity, VIII., 6.*—The patient (36th Sikhs) was wounded in Tirah on Nov. 16th, 1897, by two spherical bullets. One entered the right side of the root of his neck and lodged

It was removed the next day by an incision 4 in. behind the point of entrance. The other bullet struck the palmar aspect of the terminal phalanx of the right thumb, passed upwards and emerged beyond the joint between the first and second phalanges, fracturing the bone and injuring the joint. Some fragments of the terminal phalanx were removed soon after the injury. On arrival here (Dec. 3rd) both wounds were nearly healed, but the thumb was rather stiff. On Dec. 27th he was sent on three months' sick leave.

CASE 51. *Gunshot wound in the face, II., 2.*—The patient (Rocket Section, 5th Mountain Battery) was wounded at the Sampagha Pass on Oct. 29th, 1897, by a spherical bullet, which struck him in the hollow between the chin and the lower lip and lodged in the body of the lower jaw. One tooth in the upper jaw was broken across and three teeth in the lower jaw were loosened. The bullet was removed the same day. On transfer here (Nov. 14th) the wound was nearly healed and he was discharged to duty at his depôt on Dec. 1st.

CASE 117. *Gunshot wound in the face, II., 3; right eyeball; neck, III., 1.; upper extremity, VIII., 1.*—The patient (1st Battalion 5th Gurkhas) was wounded near Sadda on Nov. 7th, 1897, by a spherical bullet while he was in a kneeling attitude. The bullet was fired from above and first hit his right eye, completely disorganising it. Next the ball struck his right shoulder over the acromion process and was diverted at an acute angle, passing under the muscles to emerge over the spinous process of the last cervical vertebra. The bullet was found in his clothes. An operation was performed to remove the remains of the injured eye. On admission here (Dec. 7th) all his wounds were healed and he was discharged to his depôt four days later.

CASE 110. *Gunshot wound in the abdomen, V., 2; fracture of pelvis.*—The patient (15th Sikhs) was wounded at Maidan on Nov. 16th, 1897. The wound of entrance was in the right hip 3 in. below the crest of the ilium and the bullet lodged in the abdominal parietes. It was removed through an incision 2 in. above the middle of Poupart's ligament and proved to be of the ordinary spherical type. The abdominal cavity was not penetrated. On admission here (Dec. 2nd) the extraction wound was healed and the wound of entrance appeared to be closing. On the 26th there was a purulent discharge from the sinus of the entrance wound, which was 2 in. long. On the 30th bare bone was felt with the probe at a depth of 3 in. and the probe passed completely through the ilium. Apparently the bullet must have pierced the right iliac bone and then must have passed under or through the iliacus muscle without penetrating the peritoneal cavity. On Feb. 1st, 1898, the wound had quite healed and three days later he was sent on four months' sick leave.

CASE 5. *Gunshot wound in the back, VI., 1.*—The patient (1st Battalion 2nd Gurkhas) was wounded by a spherical bullet at Dargai on Oct. 20th, 1897. It lodged in his back and was extracted shortly afterwards. He was struck on the right side of the back a little above the waist and the bullet track passed obliquely downwards to the left for 3 in. deeply amongst the muscles of his back. On arrival here (Nov. 3rd) the wound was healed.

CASE 151. *Gunshot wound in the back VI., 1.*—The patient (1st Battalion 3rd Gurkhas) was wounded in the Bara Valley on Dec. 13th, 1897, by a spherical bullet which entered behind the left shoulder near the posterior superior angle of the scapula and passed out 1 in. above the junction of the upper and middle thirds of the axillary border of that bone, which was not injured. On arrival here (Dec. 21st) the wounds were almost healed, so he was discharged to duty at his depôt three days later.

CASE 112. *Gunshot wound in the lower extremity, IX., 1.*—The patient (2nd Battalion 4th Gurkhas) was wounded at Kharappa on Oct. 28th, 1897, by a spherical bullet, which lodged in the left buttock and was extracted through the original wound. On admission here (Dec. 7th) there was merely an ulcer 2 in. long, by half an inch broad, which soon healed.

CASE 98. *Gunshot wound in the lower extremities, IX., 1.*—The patient (36th Sikhs) was wounded in Tirah on Nov. 16th, 1897. One bullet struck him on the front of the right leg about 5 in. above the ankle joint. It lodged between the bones and was extracted the same evening. Another bullet struck him on the back of the left thigh just below the fold of the buttock and lodged. It was also extracted the same evening. Both bullets were of the ordinary spherical pattern. On Dec. 4th he was received on transfer. On the 11th the wound in the thigh healed. On the 20th the wound in the leg healed. On the 29th he was sent on three months' sick leave.

CASE 169. *Gunshot wound, XI., penetration of the knee-joint with fracture of the patella.*—The patient (1st Battalion 2nd Gurkhas) was wounded on the Samana on Sept. 11th, 1897, by a spherical bullet, which entered on the outer border of the left patella a little below the centre of the bone, fractured it, and lodged in the knee-joint. On admission here (Jan. 21st, 1898) he had a linear scar on either side of the patella. These were the scars of incisions made at Kohat in September, 1897, for the extraction of the bullet and drainage of the joint. His leg was on a posterior splint and there was marked stiffness of the joint. Fibrous union of the patella had taken place. On Feb. 2nd there was a transverse sulcus over the patella corresponding to the depression in the line of fracture. The fragments of the patella were separated by three-quarters of an inch of fibrous tissue allowing of considerable lateral movement of the fragments. There was partial ankylosis of the knee-joint owing to fibrous adhesions. The muscles of the limb were much wasted. On the 15th the condition was the same, but as the patient refused any operative interference he was sent to his regimental depôt next day.

CASE 159. *Gunshot wound in the lower extremity, IX., 1.*—The patient (1st Battalion 3rd Gurkhas) was wounded in Tirah by a spherical bullet on Dec. 8th, 1897. It entered the outer side of his left leg 3 in. below the knee-joint and emerged 2 in. behind this point. On his transfer here (Dec. 21st) the wound of exit was closed and that of entrance was nearly healed. Three days later he was sent to his depôt.

CASE 185. *Gunshot wound, XI., penetrating ankle-joint, with fracture of the fibula, astragalus, and os calcis.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai on Oct. 20th, 1897, by a spherical bullet which struck him over the external malleolus, smashing it and opening the ankle-joint. It passed downwards and outwards, splitting the astragalus and os calcis, and lodged about the insertion of the tendo Achillis, whence it was extracted soon afterwards. At the same operation pieces of bone were removed through the wound of entrance. Later other pieces came away through both wounds. At Kohat an abscess formed over a sequestrum close to the incision wound which was made for the extraction of the bullet. This was opened and the dead bone was removed. On admission here (Jan. 27th, 1898) he had a depressed scar adherent to the outer malleolus and the latter was much thickened. There was another depressed and adherent scar over the os calcis and a linear incision where the abscess had been opened. There was a good deal of callus over the os calcis and the ankle-joint was enlarged and stiff. Flexion and extension were reduced to about half the normal and the patient was unable to walk. Massage and gentle passive movements were commenced. On Feb. 1st there was no pain and only a slight defect in his gait, but the patient will probably be disabled permanently as a soldier. On the 22nd he was sent on six months' sick leave.

(To be continued.)

THE INFLUENCE FOR EVIL OF THE MIDDEN-PRIVY IN THE DISSEMINATION OF TYPHOID FEVER.

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THE influence for evil of the midden-privy in the dissemination of typhoid fever may be exerted in several ways—e.g., by soil-pollution, air-pollution, and contamination of milk, &c., by infected particles therefrom. Dr. S. Martin and Dr. J. Robertson have recently shown that in soil fouled by leakage from these receptacles Eberth's bacillus will survive and multiply for very long periods, whereas in virgin soils it loses all signs of vitality in a comparatively short time. Again, the late Sir George Buchanan truly said in 1888 in an official Local Government Board Memorandum: "In enteric fever the evacuations should be regarded as capable of communicating an infectious quality to any night-soil with which

they are mingled in privies," and Sir Richard Thorne, his successor, has recently remarked that the midden-privy provides almost every factor "favourable to the setting up and maintenance of those very conditions which seem to be essential to the vitality and multiplication of the typhoid bacilus." The value of these warnings has, moreover been established beyond all question by Professor Delépine, who in a characteristically ingenious manner demonstrated the presence of swarms of Eberth's bacillus in the detritus from between the floor bricks of a privy-pit into which typhoid dejecta had thirteen months before been thrown, the receptacle having been repeatedly subjected to careful disinfecting processes in the interval. To this striking bacteriological proof may be added an abundance of the "evidence of experience" of midden-privy towns in regard to typhoid fever.

In the appended table are set forth the statistics for Stockport during the five years 1893–97. In order to make the inquiry as equitable as possible the privy-pit houses and water-closet houses have, with much labour, been enumerated and classified from the rate-books, and the incidence of typhoid fever on each class compared *according to rateable value*, which has been taken, partly at the suggestion of Professor Delépine, as a fair indication of the sanitary condition in other respects of the two classes of dwellings.

Table showing for the Five Years 1893–97 the Incidence of Typhoid Fever in Stockport on Privy-pit Houses and Water-closet Houses respectively.

Rateable value.	Privy-pit houses.		Water-closet houses.		Typhoid fever incidence per centum of	
	Average number.	Cases of typhoid fever notified.	Average number.	Cases of typhoid fever notified.	Privy-pit houses.	Water-closet houses.
Under £5	2,811	54	176	1	1·92	0·56
£5 and under £8...	7,771	275	703	3	3·53	0·42
£8 and under £10	1,415	57	746	9	4·02	1·20
£10 and under £12	1,077	42	425	8	3·89	1·88
£12 and under £14	449	16	225	4	3·56	1·77
£14 and under £20	656	30	613	8	4·57	1·30
£20 and under £30	249	13	374	2	5·22	0·53
£30 and upwards...	147	8	369	9*	5·44	2·43*
—	14,575	495	3631	44*	3·39	1·21*

* This figure does not include 2 cases reported from the infirmary and 4 from the workhouse hospital.

In 72 instances during the five years infection of a privy-pit with typhoid discharges was followed by one or more cases amongst those who subsequently used the privies. The entire number of such subsequent cases was 116 out of a total of 545 notified, or 21·3 per cent., and as many as 4, 5, 7, and 8 cases were upon occasion traced to the same privy-pit. The details are as follows. In 53 instances 1 subsequent case occurred—viz., in 37 cases within a few weeks, in 10 cases about one year later, in 3 cases about two years later, in 1 case about three years later, and in 2 cases about four years later. In 10 instances 2 subsequent cases occurred—viz., in 7 cases within a few weeks, in 1 case about one year later, and in 2 cases about two years later. In 2 instances 3 subsequent cases occurred—viz., in 1 case within a few weeks and in 1 case about a year later. In 2 instances 4 subsequent cases occurred—viz., 1 within a few weeks and 1 about three years later. In 3 instances 5 subsequent cases occurred—viz., 2 were within a few weeks and the other four years later. In 1 instance 7, and in another 8, subsequent cases occurred within a few weeks. During the same period only 1 subsequent case (and that was three years later) occurred where a water-closet was used. This was in a very large public institution, and it is doubtful whether the water-closet infected by the first sufferer was used by the second.

It is noteworthy that the figures for Stockport show that the incidence of typhoid fever increases with rateable value both in privy-pit and water-closet houses.

Stockport.

A CASE OF

CHRONIC CONSTIPATION ENDING FATALLY AND ASSOCIATED WITH ENORMOUS DILATATION OF THE SIGMOID FLEXURE.

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ASSISTANT RESIDENT MEDICAL OFFICER TO THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON.

THE patient was a young man, aged twenty years. The account of the case is necessarily rather imperfect, as he was not a patient of any of the physicians at the hospital, but was treated by his own medical man outside. The history of the case showed that from the day of his birth to the day of his death the patient suffered from constipation and his bowels were apparently never opened without recourse to artificial means. For the first week of his life he was exceedingly ill, passed nothing but blood and water by the rectum, and was not expected to live. After the first week he began passing fæcal matter, but the motions were never those proper to an infant, consisting almost entirely of scybala, and they were passed with much pain and screaming. The motions, such as they were, were not obtained without previous ½ oz. doses of castor oil, which often had to be repeated two or three times in the course of twelve hours before the bowels acted. As the child grew the bowels were only opened by drugs, and with increased difficulty, and at the age of twelve months the mother began to have recourse to ½ pint enemas of soap and water. Later enemas of a whole pint had to be given and very often had to be repeated two or three times before the bowels were opened. The after-history of the case is merely a repetition. The bowels used only to be opened at intervals of ten days or a fortnight and only after repeated enemas. A very large scybalous motion was then passed, generally succeeded by several loose motions, spread over the next two or three days. The motions could only be passed by the help of gravity—i.e., squatting down over a chamber in the position which, as Dr. Lauder Brunton has pointed out, is the natural and proper one for defecation. The patient very often felt slightly sick before the bowels were opened and was very much collapsed afterwards, so much so that he often had to go to bed for the rest of the day. His abdomen was always greatly distended, so that he could never button the bottom button of his waistcoat or the top button of his trousers. About a month before he died he was taken ill with influenza and on getting better he went away into the country for a holiday. Five days before death he was seized with pains all over his body and slight swelling of the legs, and in consequence he hurried home. He was treated by a medical man who thought that he had a slight touch of rheumatic fever. The night before he died he passed a fairly large motion. On the morning of the next day he was seized with a severe pain over the heart for which the præcordial area was rubbed with liniment, which gave him considerable relief, and shortly afterwards he went to bed feeling fairly comfortable. During the following night he suddenly got out of bed for some unknown reason and fell down dead.

The body was brought to the hospital, and at the necropsy it was found that it was well developed and that rigor mortis was not present. There was very slight œdema over the feet and shins, but enormous general distension of the abdomen. On reflecting the parietes the abdominal cavity was found to be occupied by a tense shining viscus, presenting the appearance of a sac rising out of the pelvis and passing under the ribs, where it doubled on itself and returned to the pelvis again. On closer inspection this proved to be an enormously distended sigmoid flexure. At the point where the sigmoid flexure left the descending colon it turned on itself and passed directly up the left side of the abdomen. The summit of the viscus then passed behind the ribs and xiphisternum with a gentle curvature and descended along the right side of the abdomen to the pelvis to join the rectum. Some little distance above the junction with the rectum the viscus showed a distinct constriction. The remaining abdominal viscera were entirely concealed by the sigmoid flexure, which pushed the liver upwards and backwards, compressed the lungs, and rotated

the heart upwards and outwards. On removing the sigmoid flexure and laying it open it was found to contain an enormous amount of gas and also a large quantity of semi-liquid fæces of the consistence of pea-soup. The total length of the sigmoid flexure when it was opened and laid flat was 22½ inches. Fourteen inches from its upper end was a large cicatrix formed by an almost healed ulcer, probably stercoral in origin, which had caused the constriction above mentioned. The circumference of the flexure above the ulcer was 14 inches, at the ulcer it was 7¼ inches, and below the ulcer it was 10 inches. These measurements, of course, represent the circumference of the flexure at its period of least distension, and they also show that the constriction at the site of the ulcer was merely a relative one and could have made no difference, or very little, to the onward passage of the fæces. The walls of the sigmoid flexure were uniformly greatly thickened. This thickening was shown on microscopical examination to be almost entirely due to great hypertrophy of the circular and longitudinal muscular fibres. There was also slight thickening of the submucosa. As regards the rest of the organs, the pharynx, œsophagus, and stomach were quite healthy. The small intestine also showed no lesion and was not at all distended. There was slight general distension of the cæcum and of the ascending, the transverse, and the descending colon. This distension was not at all marked and the large intestine appeared otherwise healthy, as did also the rectum, and there was no sign of a fibrous band, kink, or constriction anywhere except at the ulcer above mentioned. The lungs were small and compressed by the abdominal distension and were slightly œdematous and engorged. The heart was somewhat displaced but was otherwise perfectly sound, as also were the liver and spleen. The cortices of the kidneys were slightly swollen and streaky and on microscopical examination the renal epithelium appeared to be in a state of cloudy swelling.

The disease in this case would appear to come under the heading of so-called "idiopathic dilatation of the colon." Dr. Hale White, in his excellent article on the subject in Allbutt's System of Medicine,[1] mentions that only 12 cases have been recorded in the last forty years, and he provisionally groups them under two heads—those occurring in elderly patients and those occurring in young children due to some congenital inertness of the bowels. Whatever may be the initial cause—whether it was due to a temporary kink, as Rolleston and Haward[2] suggest, or to the length of the sigmoid in children readily allowing kinking, as Jacobi[3] suggests, or to mere constipation and distension with wind or local spasm of the rectum, as Gee[4] suggests, the attempted remedies in this case must probably have increased the disease. The patient moved in a vicious circle and the sigmoid, already distended, was ever being more distended by the successive enemas administered. So far as could be judged from the post-mortem appearances the only possible treatment which could have had any permanent success would have been a lumbar colotomy.

Brompton.

[1] Allbutt's System of Medicine, vol. iii., pp. 967-972.
[2] Transactions of the Clinical Society of London, vol. xxix., 1896.
[3] Archives of Pediatrics, vol. x.
[4] St. Bartholomew's Hospital Reports, vol. xx.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON PTOMAINE POISONING.

BY JOHN CAHILL, M.D. DURH., F.R.C.S. ENG.

THE subjoined instance of multiple poisoning by apparently wholesome food has occurred under my direct observation and may be considered worthy of record.

On Oct. 13th a brace of wild ducks, which appeared to be in very good condition both before and after cooking, formed part of the dinner of a party of five. All five persons partook of the ducks without any ill effect. On the 14th a portion of wild duck, cooked the day before, was eaten at dinner by two persons, appeared very palatable, and produced no ill effect. On the 15th the bones of the same ducks were placed by the cook in her stock-pot together with the meat for soup. At dinner on that evening there were three persons, of whom one took no soup, one took soup only, and the third took the soup and other courses of the dinner which followed it. Within less than half an hour the two persons who had taken soup at table were seized with sickness and continued to vomit violently for about twenty minutes. The person who had partaken of the rest of the dinner, but not of the soup, was not in any way affected. The cook had tasted the soup by drinking about half a teacupful before it went up to table, and she was seized with sickness and vomiting after about the same interval and in the same manner as the two persons upstairs. The soup was obviously the cause of the sickness in these three cases, and there was the following evidence to show that the poisonous element in the soup proceeded from the wild duck, although these had been eaten without harmful result on the two preceding days and had appeared to be perfectly sweet when used as an addition to the soup. When the cook had sent the soup up to table it happened that she gave a bone of duck out of the pot to the cat. A little later, when the three cases of sudden sickness had occurred, inquiry was made as to the effect of this food upon the cat. That animal was found at the back of the house vomiting and evidently in great distress. None of the sufferers appeared the next morning to be any the worse for their experience.

Seville-street, S.W.

SUPPURATION IN AN OLD HERNIAL SAC.

BY A. S. NAKASHIAN, M.D.

ON August 27th I was called to see a Turk, twenty-two years of age, who had had right inguinal hernia for ten years. The scrotum was now swollen, tense, and very tender, and the contents were irreducible. Ten days previously he had taken to his bed with chills, fever, and pain in the abdomen. Five days after the beginning of this illness (to use his own language) his "intestines came down and did not go back as usual." It seemed to me like strangulated hernia, but there was no vomiting and the bowels were acting quite regularly. On the second day I operated and evacuated about a pint of fœtid pus from the hernial sac which did not contain any intestine. The inguinal canal was firmly closed and there was no communication with the abdominal cavity. I washed out the sac and established free drainage, after which he improved very much for a week. Then he began to get worse, having fever and complaining of abdominal pain. In a few days I detected very marked swelling and dulness in the lower third of the abdomen, which was tender and gave all the signs of containing pus, while the upper two thirds were flat, natural, and not tender. I did not open the abdomen but continued fomentations and tonics with occasional doses of opium to relieve him. By this treatment the swelling and fluid disappeared in eleven days. The man is now going about and transacting his business as formerly.

I think this was a case of tuberculous peritonitis accompanied with tuberculosis of the sac. The interesting features to me were the rapid closure of the sac, the partial peritonitis, and the rapid disappearance of the fluid and inflammation from the abdominal cavity.

Konia, Turkey.

MEMBRANOUS LARYNGITIS, WITH HYPERPYREXIA FROM MALARIAL POISON.

BY CHARLES LLOYD WORRALL, L.R.C.P. LOND.

AT the cost of being considered long behind the times I am driven to designate the following as a case of "simple membranous" laryngitis in contra-distinction to diphtheritic laryngitis. This one is compelled to believe owing to the total absence of the usual symptoms of diphtheria. On Sept. 20th I was asked to see a child, two and a half years of age, who had been ailing for about five days, the symptoms notably being a very frequent cough of the characteristic "croupy" type with almost entire loss of voice. On examining the throat a very marked whitish membrane—not of the "wash-leather" type—was seen at the back of the throat implicating the larynx, the tonsils

and palate being quite free, and these parts remained quite free to the last. Until Sept. 23rd the child was treated in the usual way, when the dyspnœa at times became so very pronounced and inspiratory recession of the intercostal spaces so marked that on the evening of the same day, with the kind help of a colleague (Mr. P. C. Powrie), I performed tracheotomy. Vitality was so good that it was deemed advisable to give a few whiffs of chloroform. In a few minutes after the trachea was opened and a few free inspirations were taken all the urgent symptoms passed. On the following morning the child continued to do well, but about midday, without any warning, he was seized with a convulsion which lasted for a considerable time, notwithstanding a tepid bath, &c. Later in the afternoon the temperature was found to have run up to 108·9° F. A tepid bath reduced it a couple of degrees, but notwithstanding this the child soon got into quite a collapsed condition and died about 6 P.M. I should mention that the child never regained consciousness after the convulsion. Further, it should be stated that until the day after the operation there had never been anything like a high temperature and I would point out that but for the hyperpyrexia the case might perhaps have had a more happy termination. To explain more fully, the child came from a malarial district and I had attended him more than once for malarial fever, but the last time when I attended him for this complaint was many months ago. But notwithstanding this I do not exonerate myself for withholding quinine in the case and should I ever have to treat a case of this kind again in a malarial district I shall place quinine as the first drug on my list.

Barberton, South African Republic.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

A CASE OF EXTRA-UTERINE FŒTATION; REMOVAL OF A FULLY-DEVELOPED DEAD CHILD, THE PLACENTA BEING LEFT; RECOVERY.

(Under the care of Mr. FREDERICK PAGE.)

THE danger of severe hæmorrhage after removal of the placenta in cases of extra-uterine fœtation results from the fact that the tissues of the placental site have no power of contraction, so that the vessels continue to bleed freely. When the fœtus dies the circulation in the placenta ceases, first in the fœtal vessels and later in the maternal vessels, so that after a certain time the placenta may be removed without risk of severe loss of blood. In the interesting case reported below this thrombosis of the placental vessels had not occurred, although a fortnight had elapsed from the death of the fœtus, for severe hæmorrhage threatened when the removal of the placenta was attempted. A further point of interest in the case is the absence of any lochia or decidual cast. For the notes of the case we are indebted to Dr. J. D. Wardale, surgical registrar.

A woman, aged thirty-nine years, was on July 7th, 1898, admitted into the Royal Infirmary, Newcastle-upon-Tyne, under the care of Mr. Frederick Page. She stated that she had considered herself pregnant, but had gone ten months and parturition had not taken place. Eighteen years ago she had her only child, the labour being normal. There was no history of floodings or miscarriages. Menstruation had been quite regular until ten months previously, when it suddenly ceased; morning sickness and enlargement of the breasts followed, causing her to consider herself pregnant. Two and a half months later she was suddenly seized with severe cramping pains in the abdomen and felt cold and shivered, but she did not vomit, nor was there any loss of blood from the vagina. This attack lasted twelve hours. A week later she had a similar but more severe attack, on account of which she was confined to bed for three months. Five months after the cessation of the menses she felt "quickening"; meanwhile, the abdomen was steadily increasing in size and the breasts contained milk. Six weeks before admission, being, according to her calculations, eight and a half months pregnant, she experienced severe intermittent pains in the front of the abdomen. A month later she again felt similar pains with greater severity, and at this time there was also a slight blood-stained vaginal discharge. Since then these pains had recurred about every ten minutes and in consequence she had had very little sleep during the fortnight before admission. During the past six weeks the breasts had gradually diminished in size.

The patient looked thin, sallow, and exhausted, the pulse was 120, feeble and of low tension, and the temperature was 100° F. The abdomen was hugely and uniformly distended. A tense cystic mass, in which fluctuation could be readily elicited in all directions, extended from the pubes to within about 1 in. of the ensiform. The whole mass became tense at times of pains; at such times also a hard, ball-like mass of the size of a closed fist could be seen to contract to the right of the middle line, about 5 in. above the pubes. Nothing representing the fœtal limbs could be felt. On repeated auscultation no fœtal heart-sounds were heard but a loud and distinct placental souffle was made out on the left side below the level of the umbilicus. The breasts were soft and flaccid; a very little milk could be expressed with difficulty. The vagina was soft and œdematous, extending in a forward direction behind the pubes, but the os could not be reached. The posterior vaginal wall bulged as if with fluid, through which a hard mass, like the fœtal head, was readily felt and could be pushed up through the fluid, giving distinct *ballottement*. A catheter on being passed into the urethra went in a backward direction; the bladder contained very little urine; the urine was alkaline, very foul, and contained mucus, pus, and phosphates. Cystitis was present.

On account of the patient's bad condition, owing to sleeplessness, frequent repetition of pains, and cystitis, she was kept at rest, sleep was induced by the administration of opium, and the bladder was frequently washed out. The temperature meanwhile fluctuated between 97·6° and 100°. On July 19th, twelve days after admission, the patient was anæsthetised, chloroform being used, and on introducing the hand into the vagina the cervix was felt high up, 1½ in. above the pubes, the os being soft and patulous, readily admitting the forefinger. An incision was made in the middle line extending from 4 in. above the umbilicus to 2 in. above the pubes. The enlarged uterus, of about the size of a cocoanut, presented immediately below the umbilicus and to the right of the middle line. Behind, above, and around this was a tense cyst of a bluish colour, covered by the thinned omentum, which was adherent and very vascular. The omentum was partially detached, a trocar was inserted into the cyst, and a large quantity of grumous blood-stained fluid was removed which had no smell of putrefaction. The opening in the cyst wall was now enlarged, a leg was seized, and a dead full-term fœtus was removed. The cord was torn through close to the umbilicus. The placenta was found firmly adherent to the left side of the sac wall; it was not disturbed. The intestines, small and collapsed, were found above and to the right of the sac. The edges of the opening into the cyst were closely sutured to the lower part of the abdominal incision and the cavity was packed with gauze. The upper portion of the incision, that communicating with the general peritoneal cavity, was packed off with gauze and was carefully closed with sutures. As far as could be made out this large sac was entirely retro-peritoneal. The fœtus weighed 6½ lb.

After the operation the patient was greatly troubled by "after pains," which were controlled by opium. On July 20th, the day following the operation, the evening temperature reached 102·2°. On the 21st the gauze packing was removed, no hæmorrhage occurring, and the cavity was repacked. On the 22nd the wound was dressed daily and the cavity was douched with corrosive sublimate (1 in 10,000) and subsequently with a lotion of permanganate of potassium. On the 24th the finger was gently inserted under the edge of the placenta and the cavity at once filled with dark venous blood. The packing was again firmly introduced. On the 31st a further attempt was made to separate the margin of the placenta and the cavity again promptly filled with blood. The hæmorrhage was readily stopped by packing. The

placenta gradually came away piecemeal, the last remnants separating on August 11th. Since the operation there had been no lochial discharge and no decidual cast of the uterus had been thrown off. The temperature meanwhile had been fluctuating between 98·6° and 100°, on one occasion (August 2nd) reaching 102·2°. On and after August 16th the temperature remained normal. On August 26th the patient was discharged in good condition with a minute sinus at the lower extremity of the wound. She has been seen at a more recent date healed and in good health.

Remarks by Mr. PAGE.—The point to which I wish particularly to direct attention is the treatment of the placenta. The child had certainly been dead for twelve days before the operation, but the placenta remained "quick." Some twenty years ago a case very similar to the one reported occurred in the Royal Infirmary, Newcastle-upon-Tyne. The child was beyond term and dead at the time of the operation. The placenta was left *in situ*. A few days after the surgeon removed the placenta and the woman died at once from uncontrollable bleeding. I am satisfied had I removed the placenta either at the time of the operation or some days later that my patient too would have bled to death. It is stated in Bland Sutton and Giles's work on "Diseases of Women," 1897 edition, p. 248: "If the fœtus dies before the operation is attempted the placenta can be removed without risk of hæmorrhage." I think this dictum requires qualification.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Fibrinous or Membranous Rhinitis and its Relation to Diphtheria.

A MEETING of this society was held on Oct. 25th, the President, Mr. BRYANT, being in the chair.

Dr. H. LAMBERT LACK read a paper on Fibrinous or Membranous Rhinitis and its Relation to Diphtheria. Fibrinous rhinitis, first described by Schuller in 1871, was defined as a subacute or chronic affection of the nose, characterised by a fibrinous or membranous exudation on the nasal mucous membrane. The great interest of the affection lay in its connexion with diphtheria, the older observers considering the diseases quite distinct, while more recent observers, relying on the results of bacteriological examination, claimed that fibrinous rhinitis was merely a mild manifestation of diphtheria. Cases of the disease were shown to be very common, forming no less than 2½ per cent. of all the children attending Dr. Lack's hospital practice. A brief analysis was then given of the symptoms presented by 36 cases of the affection. The disease was shown to be essentially one of children and to occur most frequently in the autumn months. The chief symptoms were purely local, such as nasal obstruction and discharge, excoriation of the nostrils and upper lip, occasional epistaxis, &c.; sometimes sore-throat was seen, presenting peculiar characteristics, which were described. The affection was very chronic, lasting on an average from six to eight weeks or more. General symptoms were seen to be very mild and sometimes were altogether absent. Many cases were not seen until very late in the disease; others probably were often overlooked even by competent observers; and some probably were never seen at all, the children, not being in any way ill, continued to attend school, &c., as usual. There was complete absence of all paralytic sequelæ. A brief sketch was then given of nasal diphtheria and special attention was drawn to cases in which a purulent nasal discharge persisted often for many weeks after an attack of true faucial diphtheria. The symptoms of the two diseases, fibrinous rhinitis and true nasal diphtheria, were then briefly contrasted. The results of bacteriological examination carried out in 33 cases were then reported. The true Klebs-Löffler bacillus was constantly present, generally in pure culture, sometimes mixed with pyogenic cocci, sarcinæ, &c. It was usually of the large variety, and its identity was proved by its morphology, by its growth on various culture media, &c. It was further shown to be of full virulence on animals, to produce virulent toxins, and to be neutralised by antitoxins. Further, it was shown to be capable of living for several months on culture media and by its vigorous growth to crowd out other organisms if present. Finally, the surroundings of the patients were examined, all sources of diphtheria sought for, and, as far as possible, all persons with whom the patients came into contact seen and examined both clinically and bacteriologically. A previous history of diphtheria was found in connexion with one case only. The disease was found to be very infectious, however; often it gave rise to itself (9 cases occurred in four families), and often to mild sore throat, 25 instances of which occurred in 11 families. The Klebs-Löffler bacillus was also found in the throats of healthy people who had been in association with these cases. A comparative investigation showing the frequency with which the bacilli were found in healthy noses was then described, and statistics of similar investigations on both healthy noses and throats and on cases of non-diphtheritic sore throat were quoted. The conclusion was arrived at that fibrinous rhinitis was a mild variety of diphtheria, the difference in the clinical manifestations apparently depending on some differences in the organisms associated with the Klebs-Löffler bacillus. The diagnostic value of the presence of the bacillus in sore throats which did not clinically appear to be diphtheria was also discussed and was considered to be very slight.

Dr. ALLAN MACFADYEN said that the association of the Klebs-Löffler bacillus with membranous rhinitis was now established, but it certainly was at first sight puzzling to find this bacillus present in this chronic rhinitis, in true diphtheria, and even in normal throats. There were probably several factors in infection. 1. The properties of the bacillus. It had been shown that the bacilli obtained by culture from true diphtheritic throats varied greatly in virulence. During convalescence, too, it had been shown that the bacillus altered in form and became shorter and stouter—the so-called "pseudo-diphtheria bacillus." By artificial means also the virulence of a culture could be degraded or intensified. 2. The condition of the tissues. 3. The presence and virulence of associated pyogenic organisms might lower the vitality of the tissues and facilitate the entrance of the diphtheria bacilli.

Mr. T. D. LISTER said that he had examined the nasal mucus of 125 children at the East London Hospital for Children. Of these 69 had some nasal discharge, watery, muco-purulent, or hæmorrhagic. These hæmorrhagic cases all gave pure cultures of the Klebs-Löffler bacillus. There were 39 children in whom the bacillus was found, and of these 10 were free from any nasal discharge whatever. Some were sent home and some were isolated in the hospital, but in no case did ordinary cases of diphtheria arise from these children coming in contact with others. He had examined 2 cases post mortem. In 1 there was a creamy exudation on the nasal mucosa as described by Dr. Lack, in the other there was nothing.

Dr. E. W. GOODALL said that it was well known that the Klebs-Löffler bacillus was present in very different conditions as, e.g., in the sore throat of scarlet fever and in healthy people. But the evidence of a causal connexion between this bacillus and diphtheria was too strong for it to be given up. He did not understand whether there had been definite membrane in Dr. Lack's cases. There was a form of nasal discharge occurring after scarlet fever which was very obstinate. Dr. Todd had found the Klebs-Löffler bacillus present in all of 51 cases he examined, corresponding to 700 or 800 cases of scarlet fever admitted. None of these gave rise to any case of diphtheria among other patients. But even when a case of true diphtheria (as shown by subsequent paralysis) got into a scarlet fever ward and was unrecognised for some time, it often did not infect scarlet fever cases. He asked if any of the cases had been treated with antitoxin, as in the cases of nasal discharge after scarlet fever the trouble stopped in a day or two if antitoxin was administered. Dr. Lack's description of true nasal diphtheria rather described forms in which it extended from the pharynx. He thought that when membrane was confined to the larynx or the nose constitutional symptoms were less severe, possibly because absorption of the toxins was less easy from those surfaces. He still thought that a case of sore throat in which Klebs-Löffler bacilli were present should be isolated and treated as diphtheria.

Mr. C. R. LYSTER mentioned a case in which a boy who was regarded as having only a slight cold in the head and without being himself ill brought the disease from a school

and communicated it in a virulent form to his mother and sisters, who died from it.

Dr. LACK, in reply, said that the throat was affected as well as the nose in his cases. In describing true nasal diphtheria he had drawn his picture from cases associated with faucial diphtheria. There was membrane on the nasal mucous membrane in his cases. This could only be seen on careful examination with a mirror as it did not affect the vestibule.

MEDICAL SOCIETY OF LONDON.

Abdominal Section for External Injury.—Venesection in Acute Pneumonia.

A MEETING of this society was held on Oct. 24th, Dr. KINGSTON FOWLER, Vice-President, being in the chair.

Mr. MARMADUKE SHEILD read a paper on four cases of Abdominal Section for External Injury not accompanied by Wound. After referring to the extreme difficulty of deciding how to act in this class of cases he related firstly the case of a boy, eleven years of age, who was run over by a cab and showed all the signs of grave abdominal injury, with serious collapse, which did not pass off. The abdomen was opened and found to be distended with blood, like a ruptured extra-uterine gestation. The source of hæmorrhage was found in a tear of the mesentery, which was repaired. The patient made a rapid and complete recovery. The next case was similar—a boy was run over by a heavy vehicle. The abdomen was found full of blood and the jejunum was torn quite across. A resection of intestine was rapidly done, end-to-end anastomosis being employed, and the mesentery was repaired. The case proved fatal and after death a second rupture which had escaped observation at the operation was found in the transverse duodenum, which was the source of the fatal peritonitis. The resected intestine had joined and held water under considerable pressure. The third case was a desperate one of ruptured liver in a boy, sixteen years of age, and was related to show the success of the treatment of the hæmorrhage in these injuries by plugging with iodoform gauze. The last case was very interesting. A woman, sixty-one years of age, was run over across the lower abdomen and showed grave signs of injury, together with hæmaturia. The bladder, however, held injected boric fluid and the diagnosis was made that it was intact. Blood, however, returned with the injection. The collapse and serious symptoms rather got worse than better and the abdomen was opened. There was some blood-stained fluid in the pelvis. The source of bladder trouble was apparent in a large ecchymosis of the size of a halfpenny on the posterior aspect of the fundus, just where rupture so commonly occurs. Careful examination showed that no actual perforation existed. The liver, spleen, and renal regions were palpated, but nothing more was found. After the operation the patient became feverish and maniacal. The symptoms were of the most puzzling nature and pointed to some pyæmic process, though its cause was not even guessed at. After death a fæcal abscess was found tracking up in the retro-peritoneal tissue towards the right kidney. This originated in a small rent on the posterior surface of the cæcum. It was peculiarly unfortunate that this had not been detected during life as it admitted of such easy repair. In conclusion Mr. Sheild discussed the indications for these operations. The symptoms of ruptured kidneys and bladder were generally to be demonstrated and the rules of treatment were tolerably clear. It was in ruptured intestine and mesentery, injuries of the liver and spleen and of the sympathetic nerves, that the greatest difficulties arose. As a general rule, when, after a severe abdominal injury, the symptoms were progressively grave, and especially if vomiting and abdominal distension began to come on, exploration was indicated. The mortality would be in direct proportion to the gravity of the injuries; the fatal operations are merely failures to save a life otherwise certainly doomed. It was of the utmost importance that these cases should be related. Only by accumulated experience could rules of practice be formulated.—Dr. KINGSTON FOWLER said it was interesting to notice that in several of Mr. Sheild's cases there was more than one lesion, a circumstance which made a full diagnosis extremely difficult. In cases of chronic obstruction it was also often found that there was more than one growth or other cause of obstruction. He asked whether in the cases of rupture of the intestine there was obliteration of the liver dulness. He had formerly thought that after perforation of a chronic ulcer the disappearance of hepatic dulness was always followed by a fatal issue, but he mentioned a case in which apparently perforation of a chronic ulcer occurred. After some hours the liver dulness became obliterated, and both he and a surgical colleague were quite convinced that perforation had occurred. The patient refused operation and the normal dulness gradually reappeared, recovery taking place.—Mr. G. R. TURNER mentioned a case of traumatic volvulus occurring in a boy who fell 12 ft., striking his abdomen against the pole of a boat. There was no wound, but the abdomen was explored twenty-four hours later. The volvulus was found and released and the boy made a good recovery. Since then he had seen several cases of injury of the viscera without external wound. In the first there was abundant hæmorrhage from a small rent in the under surface of the right lobe, which was plugged, but the condition of the patient was already very grave and he did not survive. In the second case a man who was carrying a heavy weight received a blow on the abdomen rupturing the small intestine. This was found and repaired, and a hernia from which he suffered was operated on at the same time and he did well. Another patient was admitted suffering from severe collapse and vomiting. He improved for a time but the vomiting returned and the abdomen was explored. A small tear was found in the under surface of the liver, and in addition there was enormous extravasation of blood in the retro-peritoneal tissue. Vomiting persisted and he died from exhaustion caused by vomiting ten days later. The kidney was found at the necropsy to have been crushed to a pulp. A week later another man was admitted with symptoms of rupture of the kidney. The abdomen was opened in the linea semilunaris. There was no blood in the peritoneal cavity, but there was again extensive retro-peritoneal hæmorrhage. The kidney was found to be extensively torn and was enucleated, the patient making a good recovery. Although he held strongly the view that in cases of grave injury surgical exploration should be resorted to the surgeon should exercise some caution in coming to a decision, remembering that in the old days some patients did recover under expectant treatment, as was shown by specimens exemplifying repair after injury of various organs to be seen in all museums.—Dr. F. LUCAS BENHAM mentioned the case of a boy who fell striking his abdomen against the kerb. There was pain about the cæcum and severe peritonitis, with symptoms of obstruction and stercoraceous vomiting. He was treated by leeching, the free administration of mercury internally and externally, and afterwards with small doses of turpentine. He recovered without surgical assistance.—Mr. F. C. WALLIS said it was interesting that no gangrene of the intestine had resulted in the case of rupture of a mesenteric artery. The influence of injury of the solar plexus in causing part of the condition of shock must not be overlooked. He mentioned a case which occurred in Germany where hæmorrhage from the liver from a stab was successfully treated by suturing. In cases of rupture, however, he was afraid the walls would not hold.—Mr. W. H. BATTLE insisted on the importance of watching cases of abdominal injury from hour to hour, as grave symptoms were often delayed and came on suddenly. No group of symptoms could be relied on to indicate particular lesions. In cases of rupture of the intestine sometimes the symptoms were clear and unequivocal, but often they were masked. He mentioned such a case in which a man was admitted after being run over. He was free from pain, anxiety, and fever for four days, and then the temperature suddenly ran up and he died in a few hours. At the necropsy a rupture of the small intestine was discovered. The amount of shock afforded little guide as to the severity of the visceral injury. He asked Mr. Turner how long had elapsed after the injury before he operated on the case of ruptured intestine.—Mr. TURNER stated that he operated about eight hours after the accident.—Mr. SHEILD, in reply, agreed as to the necessity for caution in deciding to explore. But if the collapse did not pass off, vomiting continued, and the abdomen became distended, delay was dangerous. He thought that Dr. Benham's case might very well be one of appendicitis lit up by the injury. In contrast to that case he mentioned one in the practice of another surgeon where a woman fell and bruised the right side of the abdomen. There were symptoms pointing to injury of the cæcum, but no operation was performed. She improved for a time but

a fæcal abscess formed, no doubt the result of a small rupture, and she died from pyæmia. He did not place very much reliance on examining for dulness. The abdominal tenderness usually precluded careful percussion, and even when fluid was present, unless it were encysted or in great quantity, its presence was often masked by the distension of the intestines. The disappearance of the hepatic dulness might, he thought, be brought about by intestinal distension as well as by free gas in the peritoneal cavity.

Dr. F. LUCAS BENHAM read a paper on the Advantages of Venesection in Acute Pneumonia, with Cases in Illustration. It was based on the report of 19 cases in which venesection had been successfully performed. All these cases were severe ones and in several life was undoubtedly saved by this means. The series included some cases of pneumonia complicating influenza and phthisis. Reference was also made to the beneficial employment of leeches in some forms of pneumonia in children, particularly that which complicates whooping-cough, and is very apt to be fatal. Additional cases were mentioned where death occurred notwithstanding bleeding or where death might have been averted if recourse had been had to blood-letting. The guiding principles laid down were that though venesection affords great relief in most cases of acute pneumonia from the earliest stages, and if performed in moderation never does the slightest harm, yet that, as cases of moderate severity recover by simple means only, venesection is indispensable only in severe and dangerous cases, the object aimed at being to convert a severe form of the disease into a mild one—i.e., to subdue the over-intensity of the morbid processes, the chief indications to follow after noting the severity of the initial rigor being a rapidly-increasing frequency of the pulse and nervous disturbance marked by sleeplessness and wandering. As pneumonia is a disease the symptoms of which increase in intensity from day to day until the crisis, the progress of this intensity may be checked or stayed by blood-letting if it is advancing too fast and thus betokens danger. It was possible that greater good might be done by bleeding at the very beginning of the disease, which might be cut short thereby; but it was generally useless to delay it till the last moment, when the patient was dying from the formation of clots in the heart.—Dr. KINGSTON FOWLER said that it was now half a century since the antiphlogistic pathological theories had been laid aside. It was possible that the pendulum had swung too far in the other direction. But personally, while he quite recognised that venesection had a definite value as a therapeutical weapon, he did not go as far as Dr. Benham in his recommendation of its use in pneumonia, although he admitted that his experience of its employment in that condition was limited. The condition which called for it was distension of the right side of the heart, especially in cases of chronic bronchitis with emphysema. He mentioned such a case in which a patient was greatly relieved by free hæmorrhage from the dorsalis pedis artery which was unintentionally included in an incision intended to relieve the patient's anasarca. It was also of undoubted value in relieving for a time the pain of aneurysm.—Dr. B. B. JOLL said that he had practised formerly in a district where periodical bleeding during health was the custom and where venesection was the routine practice in pneumonia and other fevers. The results were almost uniformly good.—Dr. LUCAS BENHAM agreed as to the value of venesection in cases of bronchitis, but he had intentionally confined himself to the treatment of pneumonia in his paper. He thought that venesection would be valuable in several grave diseases such as plague, hydrophobia, and the severer forms of malaria.

OPHTHALMOLOGICAL SOCIETY.

Glioma of the Optic Nerve.—Tension of the Eye in Irido-cyclitis.—Exhibition of Specimens.

THE first ordinary meeting of the session was held on Oct. 20th, Mr. H. R. SWANZY, President, being in the chair.

Mr. J. F. BULLAR and Mr. C. DEVEREUX MARSHALL communicated a paper on Glioma of the Optic Nerve. The case upon which it was based was that of a woman, aged thirty-seven years, who noticed nothing the matter until 1889, when the left eye became more prominent than natural. It continued to become more and more pushed forward until 1895, when Mr. Bullar operated and removed the tumour with the eyeball attached. Immediately behind the globe the optic nerve was of normal size for a distance of 15 mm. It thus formed a pear-shaped swelling 50 mm. long and 20 mm. wide. A cyst-like cavity was found inside this which contained straw-coloured fluid. On opening it the interior was found to be rough and vascular and had a fatty appearance. The tumour was encapsuled. The optic nerve was completely lost as soon as it entered the tumour, and it was not again seen at the posterior part, as the growth extended at least as far as the optic foramen and was cut across behind. The patient did quite well and had since married and was in good health. The tumour was proved by microscopic examination to have originated in the neuroglia; Mr. Bullar and Mr. Marshall have therefore termed it a glioma of the nerve. The eye was normal. In the literature on the subject 130 cases of growths of the optic nerve were recorded, and the results of these showed that these tumours were of slow growth, but should be classed as malignant, as they were liable to extend into the brain, although metastases had not been found in any case. The question of growths of all sorts found in the optic nerve was discussed, and although the different terms applied to them were legion, yet Mr. Bullar and Mr. Marshall were strongly of opinion that the majority of them would fall into three groups: (1) those originating in the neuroglia, which should be termed "gliomata"; (2) those originating in the dural sheath, "sarcomata"; and (3) those originating in the pial sheath, "endotheliomata." Mr. Bullar added that there had been no difficulty in removing the tumour. As soon as the conjunctival sac was opened the finger passed readily into the orbit and the tumour was easily defined; it was not necessary to clear out the orbit. The posterior section of the growth was made as close to the apex of the orbit as possible, but the tumour was cut through so that some portion of it must have been left behind. It would have been quite easy to remove the whole of it, leaving the eye behind, but in the stretched condition of all the parts he had not thought this advisable.—The PRESIDENT remarked upon the rarity of tumours of the optic nerve. He only remembered seeing one case.—Mr. J. B. LAWFORD referred to a case published by Mr. Rockliffe in which part of the tumour had been left in the orbit without ill consequences.—Mr. TREACHER COLLINS commented on the great variety of names which had been given to this form of tumour. He thought the best classification was the anatomical one—those originating in the sheaths of the nerves and those starting in the nerve itself. The optic nerve was a prolongation of the brain substance and gliomata of the optic nerve resembled those of the brain in structure rather than those of the retina, which approached the embryonic type in their round-celled formation.

Captain H. HERBERT, I.M.S., made a communication on the Tension of the Eye in Irido-cyclitis based on observation of 144 eyes affected with the disease. In the majority of attacks, more especially in the milder attacks, the tension was, as in simple hyperæmia of the iris and ciliary body, reduced, the reduction lasting, as far as the evidence went, at least as long as any ciliary injection remained. In other cases a period of high tension of very variable duration came on. The high tension appeared to be due to blockage of the normal outlets from the anterior chamber, and the eyes chiefly affected were (1) those very severely attacked with copious exudation; and (2) eyes perhaps lightly attacked but predisposed to glaucoma, as shown by shallow anterior chamber in the sound fellow eye and by more or less advanced age of the patient. In these high tension cases the anterior chamber was deepened and the pupil slightly dilated. In the most intense inflammations the plus tension rapidly gave way to a softening, which might be permanent and which indicated atrophy of the ciliary body. The mild attacks, which were little removed from primary subacute glaucoma, were of interest because of difficulties in diagnosis and in treatment. There were no grounds for attributing high tension to cyclitis as distinguished from iritis.—Mr. PRIESTLEY SMITH said that the principles enunciated by Captain Herbert were now generally accepted. There were two processes, mutually antagonistic, concerned in the regulation of tension in irido-cyclitis: one was the suppression of secretion reducing the tension, the other was the formation of an albuminous exudation hindering filtration and raising the tension. He had been glad to hear in this paper of the value of the tonometer he had introduced; after longer experience he thought it very valuable if its limitations were recognised. He had made some experiments on tension some years ago in which a perfectly limpid

albuminous fluid obtained from a serous cavity had been injected into an eye of a cadaver and normal saline solution into the other. In the former the tension was raised, in the latter it was not raised, showing that albuminous fluids will not filter through animal membranes.

The following living and card specimens were shown:—

Mr. R. M. GUNN: A case of Retinal Disease.

Dr. R. D. BATTEN: Superficial Central Choroiditis.

HARVEIAN SOCIETY OF LONDON.

Congenital Affection of the Heart.—Enlargement of the Spleen.—Pulmonary Osteo-Arthropathy.—Exhibition of Cases.

A MEETING of this society was held on Oct. 21st, the President, Dr. JAMES F. GOODHART, being in the chair.

Dr. ROBERT MAGUIRE showed a case of Congenital Affection of the Heart in which he thought the lesion was imperfection of the septum ventriculorum. This was so far the most common of the congenital defects of the heart causing symptoms, that all others might for clinical purposes be ignored. Even in the absence of cyanosis the condition of the heart could be diagnosed by the physical signs and especially by the character of the systolic murmur which was always present and which, Dr. Maguire asserted, was always heard best along the line of the interventricular septum, diminishing rapidly in intensity when this line was left, even though the murmur could still be heard in every part of the chest. Dr. Maguire stated that imperfection of the septum might be due to two causes: (1) intra-uterine endocarditis affecting the pulmonary orifice and so preventing, by increased tension in the right ventricle, the due formation of the septum; or (2) deficient developmental energy during the formation of the septum, without any cardiac disease. These two conditions, he asserted, could be diagnosed clinically, for while in the second condition there was present merely the murmur he had described, in the first there was also observed a continuation of the murmur to the left along the line of the pulmonary artery. The occasional absence of cyanosis in such cases was due to the fact that the tension in the left ventricle might be sufficient to prevent access of venous blood to its own cavity, admixture taking place only in the right ventricle, where it was of no consequence. When, however, by reason of bronchitis or some similar respiratory trouble, the tension in the right ventricle was increased, venous blood passed through the septal opening on to the left ventricle and caused cyanosis. It was wonderful how great a deficiency of the septum was compatible with life. In one case which he had observed for some eight years, and in which cyanosis often disappeared for considerable periods, he had found at the necropsy practically only one ventricle, the septum being represented by a small semilunar ridge near the apex of the heart.

Dr. MAGUIRE also showed a case of Congenital Heart Disease and made remarks on the varieties of such malformations.

Dr. GOW expressed surprise at the statement that the disease was so rare. He inquired whether the unilateral clubbing observed in cases of one-sided chest lesions, such as collapse of the lung from old empyema, was of the same nature as the cases exhibited.

Dr. LESLIE THORNE, referring to Dr. Maguire's remarks on congenital heart disease, asked him if he would kindly explain his reason for diagnosing previous intra-uterine inflammation in cases where the systolic murmur was conducted along the line extending from the second left costal cartilage upwards and outwards towards the left clavicular region, and congenital malformation where the murmur was not so conducted.

Dr. A. P. LUFF showed a case of Great Enlargement of the Spleen due to Hyperplasia and Fibrosis. The patient, a woman, aged fifty-three years, was first admitted into St. Mary's Hospital in June, 1896, when the spleen reached on the left side to the left anterior superior spine of the ilium and on the right side 1 in. to the right of the umbilicus. Since then it had gradually enlarged until at the present time it reached from 2 to 3 in. to the right of the umbilicus and downwards to the brim of the pelvis. For the past two and a half years the red blood corpuscles had averaged from 2,700,000 to 3,540,000 per hæmic unit while the proportion of white corpuscles to red had throughout been normal. There was no history of ague, malaria, of syphilis. The liver and lymphatic glands generally were normal.

The PRESIDENT alluded to the acute arthritis which sometimes complicates phthisis and is usually regarded as rheumatic. He asked whether the first conditions in Pulmonary Osteo-arthropathy might not be due to similar but chronic forms of arthritis. He drew attention to the analogy between acromegaly and pulmonary osteo-arthropathy and asked whether changes in the pituitary body had been found in the latter affection.

Dr. LEONARD GUTHRIE showed, for Dr. JAMES TAYLOR, a boy, aged seven and a half years, suffering from the congenital form of Myopathy. His parents were then healthy. The patient was the youngest of four, of whom the eldest was alive, aged twelve and a half years. The others died shortly after birth. The patient was a full-term child. He could not walk until he was five years of age and could never walk more than a few steps. His legs had not become thinner lately but his arms had wasted. He could never use a knife and fork. He was mentally bright. There was no facial affection. The special senses and sensation, the heart, the lungs, and the sphincters were normal. Movements of the head and neck were normal. There was no local enlargement of the muscles of the arm, but all were small. The middle and lower parts of the trapezii were wasted. The upper parts were normal. The supra- and infra-spinous fossæ were flattened on both sides. There was complete atrophy of both pectorales majores except a few of the lowest fibres on the left side. The serrati magni were small on both sides. The latissimi seemed absent on both sides. The diaphragm and intercostals seemed normal, the abdominal muscles were fair, and the spinal muscles were weak. The legs were very weak. He could carry out all movements as he lay in bed, but very feebly. He could only walk a few steps. The muscles of the leg were all very small and the knee-jerks were absent.

Mr. STANSFIELD COLLIER showed a man, aged seventy-three years, who after recovering from prostatectomy was suddenly seized with Pain in the Left Eye accompanied by proptosis. The symptoms subsided but again returned, and at the present time there was considerable protrusion of the left eyeball, together with the presence of a firm, tender swelling in the left temporal region. The fundus oculi was normal. His mental condition had recently deteriorated, but otherwise there were no definite cerebral symptoms. Mr. Collier believed that the swelling in the temporal region was malignant and that the sudden onset of symptoms was occasioned by hæmorrhage into a new growth.—The PRESIDENT agreed that a new growth probably existed in Mr. Collier's patient. He alluded to the case of a public speaker who was suddenly attacked by pain in the head with marked proptosis whilst in the act of addressing a meeting. A loud bruit was audible all over the skull and he (the President) believed that an arterio-venous aneurysm had formed in the neighbourhood of the cavernous sinus.

Mr. COLLIER also showed a young girl suffering from Congenital Dislocation of the Patella.—Mr. JACKSON CLARKE discussed the case and Mr. COLLIER replied.

ÆSCULAPIAN SOCIETY.

Presidential Address.

A MEETING of this society was held on Oct. 7th, when the Presidential Address was delivered by Mr. D. H. GOODSALL, who took "Provincial Provident Dispensaries" as his subject. He said that at the present time the medical charities, certainly the medical charities of London, are grossly imposed upon. A large number of people receive gratuitous medical and surgical treatment which ought to be paid for. Where letters of recommendation are useful—and they do assist the patient at most medical charities—a common plan adopted by those who ought not to receive free medical aid is to get a letter from a subscriber through either a friend or a servant of the subscriber to the charity for which a letter of recommendation is required. The difficulty in preventing this form of fraud is well known and so far no reliable means for preventing it has been adopted, for many of these patients when questioned about their means conceal their true position. That provident dispensaries when well managed can do a

great deal towards removing the abuse of our medical charities and can also give the necessitous poor a much more thorough help in sickness than they are now receiving is shown by the results attained in seven provincial dispensaries which have been in operation for many years. The dispensaries are in the following towns—viz., Derby, Leamington, Leicester, Northampton, Reading, Tunbridge Wells, and Worcester. A provident dispensary has existed at Reading since 1802. The seven dispensaries show an average existence of upwards of 50 years and their total membership in 1897 was 101,455. As the total population of these towns amounts to 465,000, 21·7 per cent. of the population were members of provident dispensaries. The average payment per member per annum was 3*s.* 7½*d.* The highest payment (at Tunbridge Wells) was 4*s.* 11½*d.* and the lowest (at Reading) was 3*s.* A strict wage limit is in force in all these towns and rules exist by which a member whose position shall have become improved during his membership shall have his name removed from the books of the dispensary. The wage limit varies from £1 per week at Derby to 35*s.* at Tunbridge Wells. Without these dispensaries every one of the members would be eligible for treatment at the hospitals of the seven towns, and most certainly at any hospital in London—i.e., if the members wished to go to them. There is undoubtedly a strong feeling with some of the very poor that they would rather pay their medical man for his attendance than receive free medical relief, but with the majority of the working classes it is not so. Under the present arrangements in London a few of the poor pay a very little and the majority of the poor escape payment altogether. The hospital patients in the seven towns referred to numbered 56,346 out-patients and 10,602 in-patients during 1897, showing a percentage of 12·1 of out-patients and of 2·2 of in-patients. In comparison with those seven towns the following five towns may be taken where provident dispensaries are not stated to exist.

Town.	Population.	Hospital beds.	In-patients.	Proportion per cent. of in-patients to population.	Out-patients.	Proportion per cent. of out-patients to population.	Number of medical men.
Chatham	31,657	101	916	2·9	16,506	52·1	12
Hastings	52,223	78	604	1·15	2,665	5·1	?
Bath	51,844	327	3111	6	18,625	36	86
Bradford	216,361	531	3135	1·45	20,726	9·4	126
Birkenhead ...	99,857	170	1345	1·35	16,287	16·3	97

At Bradford the hospital staff paid 3052 home visits; this may mean that many patients having met with accidents were sent home and seen there instead of being admitted.

The above five towns give a total population of 441,942. The out-patients numbered 74,808, or 17 per cent. of the population. The in-patients numbered 9111, or 2 per cent. of the population. This comparison of towns with provident dispensaries as against towns without provident dispensaries shows that the out-patients are over 40 per cent. greater in the non-provident than they are in the provident towns. In the non-provident towns this increased percentage of out-patients did not contribute anything towards the cost of their treatment—i.e., the cost of drugs, &c., must have been paid by the charitable public. When compared with the seven provident towns they should clearly have contributed something towards this expense, and should have also paid the medical men who attended them. With reference to the benefit of the provident dispensaries to the poor the following advantages are given to them in the seven towns: (1) The right to apply at once for immediate medical attendance; (2) the right (in many of the towns) to consult the nearest medical officer in case of accident or sudden illness; (3) the right to choose their own medical officer when joining the dispensary; (4) the right to change the medical officer at stated times, and during an illness if the committee consent; (5) the feeling of security that in case of prolonged illness they will not incur a debt which they might find great difficulty in subsequently discharging; and (6) the encouragement of thrift and self-reliance. In reference to medical men the advantages of provident dispensaries are that (1) in accordance with the work they do for the working poor they are certain to receive some remuneration, the amount depending upon the time they devote to the work; (2) they are relieved from all trouble of supplying medicines to the poor patients; (3) they have no records to keep of the indebtedness of these patients; and (4) they have no trouble in collecting the amounts due from the patients. In the seven towns with provident dispensaries the total payments by members during 1897 amounted to £17,699 1*s.* 10*d.* The balance left after defraying expenses was £12,033 6*s.* 4*d.*, which was divided among the 76 medical officers of the provident dispensaries in those towns, giving an average of £158 6*s.* 8*d.* It may be fairly assumed that all the patients who belong to the provident dispensaries of those towns, representing 21·7 per cent. of their population, were really members of the working-classes.

CLINICAL SOCIETY OF MANCHESTER.

The Treatment of Summer Diarrhœa in Children.

A MEETING of this society was held on Oct. 18th, Dr. A. HILL GRIFFITH, President, being in the chair.

Dr. ASHBY opened a debate upon the Treatment of Summer Diarrhœa in Children. He said that the annual epidemic of summer diarrhœa with its death-roll of infant life—which has been exceptionally heavy this year—reminds us how ineffectual are our means for preventing as well as of treating this disease. Year after year with the advent of hot weather comes a visitation of acute gastro-intestinal disease which gives rise to a high mortality among infants during the acute stage and leaves many others in a permanently damaged condition. It is the universal experience that a close, hot atmosphere maintained during the whole twenty-four hours for days together is the indirect cause of the epidemic. It is well known that the heat wave supplies favourable conditions for the increased growth and virulence of various organisms, especially those which are liable to find their way into commercial cows' milk. It is tolerably certain that not one special bacillus but many are capable by their growth of forming toxins which are of a highly deleterious character. Having found entrance into the alimentary canal by means of milk or other food, the formation of toxins or toxalbumins quickly follows, which, being absorbed into the blood, give rise to fever, depression of the heart, suppression of urine, and drowsiness, and affect all the tissues of the body. Moreover, the bacteria in the alimentary canal may penetrate into the blood-vessels and give rise to inflammations in other organs, such as the lungs and meninges of the brain. Locally the toxalbumins are apt to give rise to an enteritis which chiefly affects the large bowel and lower end of the ileum, the reason doubtless being that in these parts the toxalbumins are longer in contact with the lining membrane of the bowel than they are in the upper part of the alimentary tract. Among the most important means for preventing these epidemics must be mentioned an improved condition of things as regards our milk-supply. A greater care of the health and cleanliness of the cows and byres, a rapid cooling of the milk to a temperature of 40° F., and maintenance of this temperature during the conveyance of the milk from the cow to the consumer must be reckoned amongst the most important measures of prophylaxis. The first indication for treatment is the evacuation of the contents of the stomach and alimentary canal. The vomiting which usually occurs is doubtless salutary and may be assisted by means of warm water if the infant or child will take it, or, still better, the stomach may be washed out. Stomach washing is urgently called for in cases with no vomiting and much collapse. Calomel is the best evacuant drug; if there is no vomiting it should be given in ¼ gr. or 1 gr. doses and repeated once. If the vomiting is troublesome doses of from ¼ gr. to ⅛ gr. should be given half-hourly. All milk must be stopped, and barley water, white of egg in sugar water, and chicken tea or whey given in small quantities at a time. Diluted brandy if there is any appearance of heart failure should be given. Very many drugs have been used, and recently drugs which are supposed to disinfect the alimentary canal have been much in vogue; that they are disappointing most will admit. Bismuth nitrate in large doses, from 5 to 15 gr. every two or three hours, is as useful as any. Opium

has fallen to some extent into disrepute in the treatment of infantile diarrhœa, and Dr. Ashby believes undeservedly so. The griping and colic caused by the enteritis can certainly be soothed by small doses of opiates and the excessive drain on the system checked. Enemas of starch and opium or ½ gr. of Dover's powder repeated every hour or two may be safely given within forty-eight hours of the onset of the attack to infants six months or a year old provided there is no marked drowsiness or contraction of the pupils. Washing out the large bowel by enemas of starch and boric acid by means of a soft indiarubber catheter attached to a ball syringe or funnel is certainly useful; from 20 to 30 oz. may be injected and allowed to escape by the side of the catheter. In this way the fæcal matter and toxins may be removed and the irritable bowel soothed.

Dr. W. E. FOTHERGILL stated that in hospital practice he had found all varieties of feeding-bottles unsatisfactory and had therefore discarded them entirely in favour of spoon-feeding.

Dr. J. WESTMORLAND, who had resided for two years in Southern California, referred to the fact that diarrhœa was not so rife in that country as it was here, although the temperature was much higher. He attributed this to the milk and fresh meat being cooled at once on ice and afterwards being constantly kept at a low temperature until required for use.

Dr. P. R COOPER alluded to some bacteriological observations he had made on summer diarrhœa in rabbits, which disease he had noticed was coincident with an enormous increase in the number of "resident" bacteria in the intestine. He suggested that the summer diarrhœa of children was accompanied by an increased proliferation of the normally resident microbes, which at the same time became pathologically virulent. This would explain the occasional occurrence of this disease in breast-fed children, although admittedly the majority of cases were caused by fresh invasions of organisms introduced with fermenting and unsuitable food. He was opposed to the use of feeding-bottles. He had tried most of the so-called intestinal antiseptics with disappointing results, but had had better success with the use of turpentine enemas in certain cases.

Dr. J. PRICE WILLIAMS thought that little could be done to reduce the mortality from infantile diarrhœa unless the health authorities would issue early in the summer instructions to the public as to the precautions they should take against the disease and the importance of obtaining medical advice at the very outset of the attack.

Dr. WILKINSON (Oldham) considered that the temperature of the soil had much more to do with this disease than the temperature of the air. He preferred the boat-shaped bottle to spoon-feeding and thought that sterilisation of the milk was the best preventive. He recommended that in the very early stage of the disease nothing should be given for a few hours except sips of tepid water and that milk should be altogether avoided.

Dr. ARNOLD LEA had adopted in some cases of collapse subcutaneous injection of saline fluid under the skin of the abdomen or back. This had always caused marked improvement and had been the means of saving some cases which would otherwise have proved fatal, but unfortunately the good effects were in many cases only temporary.

Dr. DULBERG in certain advanced cases had had very good results from the use of small doses of opium in a little Parrish's food and from feeding with Mellin's food in very small quantities at a time.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Cases.—Immunity after Excision of Malignant Disease. — Pneumonia. — Intussusception in Young Children.

A MEETING of this society was held on Oct. 20th, the President, Dr. MACFIE CAMPBELL, being in the chair.

Dr. CATON showed a man suffering from Elephantiasis of both legs and feet; the patient had never been abroad.

Dr. BARENDT read notes and showed a child, aged two and a half years, suffering from Xerodermia Pigmentosa. The disease affected the face, neck, and forearms. The skin elsewhere was healthy. Treatment by burnt amber ointment (2 dr. to 1 oz. of lard) had no effect. He proposed to apply the x rays.—Dr. LESLIE ROBERTS and Dr. G. STOPFORD TAYLOR spoke.

Mr. C. THURSTAN HOLLAND read notes and exhibited a patient, a boy ten years of age, who had suffered from Lupus which affected a large area of the left cheek. He had treated it by the x rays—eighteen exposures, each of 15 minutes' duration, extending over a period of two months. The ulcerated patch had quite healed. For five years previously the boy had been scarified and cauterised and treated in many other ways without any good result. The scar was supple and there was now no sign of breaking down three months after cessation of the treatment.—Dr. LESLIE ROBERTS alluded to risks of dermatitis from the use of x rays.—Dr. STOPFORD TAYLOR had treated two cases of deeply infiltrated lupus of the face without benefit by the x rays. In another case of lupus of the face with corneal ulcer an acute inflammation of the eye was set up. He congratulated Mr. Holland on the case shown.—Dr. CARTER, Dr. BARENDT, Dr. GIVEN, and the PRESIDENT having spoken, Mr. HOLLAND, in reply, thought the fear of dermatitis being caused by x rays much exaggerated. He had used the x rays in over 700 exposures and had never seen it.

Dr. NATHAN RAW showed a patient, a man, aged thirty-two years, whom he had trephined for Traumatic Epilepsy. The man fell, ten months ago, on his head, and after a long illness recovered and went to work. Seven weeks ago he commenced to have epileptic fits and was admitted to hospital unconscious. He had twenty-one fits in one day and became comatose. Trephining and removal of nearly the whole of the right frontal bone, which was irregularly depressed from fracture, was followed by cessation of the fits and in six weeks he was discharged.

Mr. F. T. PAUL read notes of Two Cases of Immunity after Excision of Malignant Disease. The first case was one of extensive epithelioma of the tongue, floor of the mouth, right tonsil and glands of the neck in a man, fifty-one years of age. An operation was performed in 1893 for its removal. Six weeks later the glands were removed. He made a rapid recovery and worked hard and lived sparingly until recently when an extension of the disease was found in the new floor of the mouth with glandular infection. This was removed. The second case was one of removal of a carcinomatous breast and axillary glands twelve years ago. There had been no recurrence.—Mr. MITCHELL BANKS observed that since no successful treatment had yet been found they were bound to go on improving the operative procedure. Early removal with a fair margin of apparently healthy tissue gave good results. He deprecated such proceedings as removal of the upper extremity in cancer of the breast and axilla and considered it discreditable to surgery when severe and incomplete operations were performed.—Dr. IMLACH said it had taken three years to answer a paper written by Dr. E. T. Davies against cancer surgery. These two patients, only one of whom was free from disease, were still living, and this was encouraging. But great surgeons, as Sir Benjamin Brodie and Sir James Paget, after a lifelong experience of cancer surgery always recanted from their early belief in it at the end of their career. — Dr. ALEXANDER and Mr. RUSHTON PARKER also spoke.

Dr. ABRAM read notes of three cases of Pneumonia. In the first case, that of a young athletic man, aged twenty-six years, gangrene of the lung supervened, followed by recovery. The second case occurred in a man, aged fifty-one years. Maniacal delirium was present. The administration of a drachm dose of tincture of digitalis, followed six hours later by a dose of two drachms, quietened him and he recovered. The third case ran a long course due to extension of the mischief to the upper lobe of the lung and the development of a pure pneumococcal empyema, which was opened. Dr. Abram held that opening such an empyema was sure to get rid of the fibrinous masses met with in these cases and favoured quick resolution.

Mr. R. W. MURRAY read a note on the Treatment of Intussusception in Young Children. He mentioned the high mortality in this affection, and after drawing attention to the uncertainty and dangers of rectal injections strongly advocated primary laparotomy.—Mr. HAWKINS-AMBLER had no idea that the results of laparotomy in this condition were so good as described. The chief dangers arose from delay in recommending operation and in advanced cases of attempting to do too much. He gave a case where enterotomy was performed on the ensheathing intestine and the gangrenous bowel removed through this opening.—Mr. PUZEY observed that there were cases where hydraulic pressure was obviously called for. He instanced a case in a child, aged five years, with an intussusception protruding from the anus, in which

hydraulic pressure was successful.—Dr. A. C. E. HARRIS strongly advocated operation and thought rapidity of performance of such operation of extreme importance.—The PRESIDENT, Dr. IMLACH, Dr. BARR, Mr. RUSHTON PARKER, and Dr. ARMSTRONG also spoke.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At the opening meeting, held on Oct. 13th, the President, Dr. Alfred Robinson (Rotherham), introduced the subject of Vaccination by glancing at the figures presented to Parliament by the Royal Commission on Vaccination and which compelled the Government to take action. He pointed out the relation of infant vaccination and its neglect to the age incidence of small-pox. During the seven years 1848-54 of 1000 deaths from small-pox 677 occurred among children under five years of age, whilst in the subsequent groups of five years the proportional number steadily declined to 193 in the years 1885-89 and afterwards rose again to 283 per 1000 in the years 1890-94, concurrently with the decline in infant vaccination. So that it seemed impossible to avoid the connexion between the rapid increase of small-pox and vaccination default. Europe 100 years ago was decimated by the ravages of small-pox, the loss of life being estimated at 400,000 yearly. On the introduction of vaccination and revaccination the immunity was so astonishing that it seemed as if the disease had vanished from Europe. Indeed, in Germany, where vaccination and revaccination were insisted upon, it was almost unknown as an epidemic and was seldom found in any but frontier towns. It was from facts and figures such as these on which the Royal Commission made its recommendations, three out of four being embodied in the Bill, the only one omitted being the State payment of private practitioners for successful vaccination. The gains of the Bill were stated to be—(1) age limit extended from three to six months; (2) operation to be performed by the public vaccinator at the child's home if required; (3) the use of glycerinated calf-lymph; (4) the conscientious objector allowed his liberty; (5) an objector cannot be convicted more than twice; and (6) recalcitrants to be treated as first-class misdemeanants. Going on to the omissions of the Bill the President pointed out that no lists were prepared for public vaccinators after the age of four years; it laid no duty on school boards in connexion with children on entering school life; finally, when children reached the age of twelve years, at which time revaccination ought to be performed, when their parents were still less likely to object, the Bill made no provision for any action being taken as regards either vaccination or penalty or declaration of conscientious objection. The President regretted the indefiniteness of the term "conscientious objection" and expressed the hope that in any future Bill sanitary authorities would have charge of vaccinal administration and also that prosecutions should be conducted by public prosecutors. In conclusion, he pointed out that the Bill was an admitted compromise, though on the right lines. It had done something, on the one hand, to remove legitimate grievances and plausible objections raised to the practice of vaccination; whilst, on the other hand, it sought to provide facilities for vaccination which had never been enjoyed before. The line taken with regard to compulsion was again that of least resistance. At present about one-third of the children in England and Wales escaped vaccination, but with an amended Act in which the gravest objections were removed much of the opposition might die out. The Act was of a temporary character, it being understood that in its present form it was to remain law for five years only. The President's opinion was that the medical profession would not rest satisfied with the law as it stood; its ethical traditions had always been to protect every life against even that life's own ignorance and self-will. It disowned the selfish maxim, "Am I my brother's keeper?"

OXFORD MEDICAL SOCIETY.—The first meeting of the session was held on Oct. 21st in the Radcliffe Infirmary, Mr. H. P. Symonds (President) being in the chair. The minutes of the last meeting and the financial report were read by the secretary, Dr. Duigan, and were approved. The following is a list of the officers who were elected at the annual meeting in June:—President: Mr. H. P. Symonds. Vice-Presidents: Professor Gotch and Dr. Brooks. Secretary and Treasurer: Dr. Duigan. Council: Dr. Collier, Dr. Ritchie, Dr. Farmer, Dr. Ramsden, Dr. Elsmore and Surgeon-General Bradshaw, C.B.—Mr. Sankey read notes of a case of Apparent Rupture of an Ovarian Cyst and exhibited the patient. A single woman, aged sixty-five years, first noticed a swelling of the abdomen in June, 1897. In September, 1898, she had a fall and had severe pain in the abdomen after, and coming now under observation she was found to have an enormous distension of the abdomen (measuring about 50 in.); there was dulness in front, with fluctuation; the flanks were resonant. An ovarian cyst was diagnosed, but there was evidence rather of bruising than of rupture of the cyst. Four days after the accident the patient passed an unusual quantity of urine and the abdomen began to get smaller until it only measured, as at present, 36 in. in circumference.—A discussion followed, in which other cases of rupture of thin-walled parovarian cysts were mentioned, where absorption of the fluid by the peritoneum had occurred, and in one case this was associated with the passage of a large quantity of urine.—Dr. Collier showed a case of Sarcoma of the Sternum involving the ribs. The heart and lungs appeared to be healthy. The treatment by injection was discussed.—Dr. Roe exhibited a case presenting some features of Insular Sclerosis. A man, aged thirty-three years, noticed weakness and difficulty in walking eight years ago. His eyesight became affected five years ago, there being loss of vision in the centre of both visual fields. At this time he was a fairly heavy smoker. There was no history of syphilis or alcohol. The knee-jerks were exaggerated and there was ankle-clonus. There was no loss of sensation. His gait was at times ataxic. He was very loquacious, but speech was normal and there were no delusions.—Mr. Doyne, who had investigated his ocular symptoms, said there was central scotoma of both eyes but there were no peripheral scotomata. It differed from tobacco amblyopia. He regarded it as a case of insular sclerosis, such cases being sometimes indistinguishable from commencing general paralysis.—Mr. Symonds showed a case of Bronchocele where tracheotomy had to be performed during the removal of the gland. He also showed a case of Congenital Dislocation of both Hip-joints, comparing it with a case of extreme rachitic deformity of the femora.

SOCIETY OF ANÆSTHETISTS.—The sixth annual meeting of this society was held at 20, Hanover-square, W., on Oct. 20th, the President, Dr. Dudley Buxton, being in the chair. The reports of the council and treasurer described the condition of the society as flourishing. The following officers for the coming session were elected:—President: Dr. Dudley W. Buxton. Treasurer: Mr. G. Eastes. Members of Council: Mr. Edgar Willett, Mr. E. F. White, and Mr. Sydney Rumboll (Leeds). Secretaries: Dr. R. Turle Bakewell and Dr. E. H. Grant Morris. Auditors: Dr. R. Probyn-Williams and Dr. McCardie (Birmingham).—The President proposed votes of thanks to Mr. Joseph White, who retired from the post of treasurer on account of illness, and also to the ex-secretary, Mr. E. A. Starling, which were carried unanimously. At the conclusion of the formal business a dinner attended by the members and their guests afterwards took place at Limmer's Hotel, Conduit-street, under the chairmanship of the President, Dr. Dudley Buxton. After the usual loyal toasts Mr. Howard Marsh proposing the toast of the evening, "The Society of Anæsthetists." He said that the great improvements in modern surgery had been produced by the introduction of anæsthetics and by the labours of Lord Lister. Anæsthetists were perhaps specialists, but they must also be good physiologists and pathologists, and must have a good knowledge of clinical medicine, whilst many were admirable surgeons and often able to give valuable hints to the operator. Moreover, they seemed always amiable, always ready to help to their utmost and in a way which made surgeons very thankful. He was pleased to see several lady anæsthetists also present that evening.—The President, in replying for the society, said that anæsthetists were peculiar in that they had few if any opportunities of seeing each other at work. It was therefore of peculiar advantage to them to have a society such as the Society of Anæsthetists, which enabled them to tell one another their special methods, their difficulties, and their failures. These last were perhaps the most instructive. The society was extremely flourishing and had taken a step which he thought would greatly extend its benefits. He referred to the first publication of the Transactions of the society. In this way they had been able to focus their work and supply a ready means for referring to the valuable papers, discussions, &c., which had been given during the year. He referred to the accord between surgeon and anæsthetist which robbed the duties

of the anæsthetist of their grimmer side and aided him on the many occasions when he had, as it were, to dispute step by step with possible catastrophe.—Mr. George Eastes proposed the toast of "The Visitors," which was replied to by Professor Schäfer.—The health of the President was proposed by Dr. Silk and drunk with musical honours.—During the course of the evening Miss Cherry sang with much feeling, Mr. Schartau rendered some humorous songs, and Mr. Churcher recited and gave some amusing sketches.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Oct. 18th, Mr. J. Foster Palmer, President, being in the chair.—The Chairman having thanked the members of the society for electing him their first President, and having referred to the remarkable advances in modern surgery and the continued invasion by the surgeon and the specialist of the functions of the physician, which threatened to bring about the gradual extinction of the latter, proceeded to the subject of his inaugural address on "Certain Undefined Factors in the Spread of Disease." The factors referred to were (1) pathogenetic evolution; (2) abnormal objective receptivity; and (3) retrograde metamorphosis. Each of these factors was dealt with separately in its relation (1) to the history of former epidemics; (2) to clinical experience; and (3) to bacteriological research. The conclusions arrived at were: 1. That however tempting evolution may be as a pathological theory there is not in the present state of our knowledge any trustworthy evidence to show that it is in any sense a general law of nature among the pathogenic micro-organisms. 2. That receptivity is essentially an abnormal condition brought about either by some external insanitary influence or by some personal defect, either hereditary or acquired, and that an ideally healthy person is proof against the toxic effects of pathogenic microbes. 3. That decomposing animal and vegetable matter forms the best possible nidus for the growth and cultivation of the pathogenic bacteria, and that it is only the presence in the air of the products of retrograde metamorphosis which makes infection possible.—Dr. Morris, Dr. Ball, Dr. Gibbes, Mr. Nitch-Smith, Dr. Penny, and Dr. Vinrace also spoke, and a vote of thanks was given to the President for his address.—On behalf of Dr. Marsh, who was absent, the President, seconded by Dr. Penny, moved that a letter of condolence be sent to the family of the late Mr. Fallows, a member of the society who was lost on the Atlantic liner *Mohegan*. The motion was carried.—A resolution was also passed in reference to Dr. Cooper, the secretary, to whom the society owed so much, and who was then absent on his wedding tour. Seven new candidates were proposed for election as members.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—The second meeting of this society was held on Oct. 21st. Dr. W. K. Hunter showed: (1) A child with Hemiplegia associated with Diphtheritic Paralysis, the hemiplegia being apparently due to hæmorrhage; and (2) a well-marked case of *Maladie des Tics*.—Dr. James Carslaw showed a young woman with painful Swelling of the Limbs, presenting resemblances to erythromelalgia.—Dr. R. S. Thomson read a paper on an Infectious Disease occurring in Lascars, having relations to variola and varicella, but differing from both in certain points. This paper was published in THE LANCET of Oct. 22nd.

Reviews and Notices of Books.

Twentieth Century Practice: an International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. In 20 vols. Vol. XIV.: Infectious Diseases. London: Sampson Low, Marston, and Co. 1898. Pp. 602. Price 21*s.* cloth; 30*s.* leather.

THE issue of the volumes of this literary undertaking, which stands comparison with the famous Cyclopædia edited by von Ziemssen, proceeds with praiseworthy regularity. Its international character, too, is well sustained, for the present volume contains contributions from England, France, Germany, and Brazil, as well as from the United States. The first article is on Scarlet Fever and is by Dr. F. Forcheimer of Cincinnati. He reviews the different lines of research adopted to discover the contagium vivum of the disease, inclusive of the classical contribution made by Dr. Klein twelve years ago in the Hendon cow disease and the subsequent announcement by Dr. Edington of his discovery of a specific bacillus. Whilst compelled to admit that the evidence is inconclusive as to the specific identity of any microbe yet discovered, Dr. Forcheimer thinks that scarlet fever has an intimate connexion with streptococcic infection. The septic character of its more severe types may perhaps be explained on this ground. In regard to scarlatinal nephritis he makes it clear that it is directly related to the virus of the disease and that it is mainly a glomerulo-nephritis, as Klebs first pointed out. He considers, too, that clinically—especially the degree and frequency of dropsy—it has distinctive characteristics. The supervention of cardiac dilatation upon this form of nephritis is also emphasised, whilst mention is made of the occasional occurrence of peri- and endo-carditis in scarlet fever apart from the "rheumatism" to which the fever may lead. Puerperal and surgical scarlet fever are regarded as being sometimes due to infection by ordinary channels, at other times by inoculation, which may account for the different characters they may exhibit. The symptoms are discussed under the heads of, first, the Normal Form, and, second, Aberrant Forms, which comprise (*a*) rudimentary forms; (*b*) grave, excessively developed forms; and (*c*) complicated forms. Such a division seems cumbrous beside the more scientific classification adopted by Dr. Caiger in his article in Allbutt's System of Medicine of (1) simple, (2) septic, and (3) toxic. In the section on Treatment attention is drawn to the variable results obtained from the use of Marmorek's serum in the various septic complications, and in speaking of antipyretic measures the author says he has long abandoned the use of drugs, whilst the claims of hydro-therapeutics are fully recognised. Dr. Dawson Williams (London) contributes a very complete study of Measles. Commencing with statistics upon seasonal prevalence and age incidence, the subject of etiology is discussed in an impartial manner, the uncertain results of bacteriological research being noticed. The symptoms are detailed in turn, the characteristics of the rash, the type of fever, its duration, and the concomitant phenomena as ordinarily met with being first described. Dr. Williams then notes the several "departures from the usual course" which may take place, and there follows an excellent study of the complications of measles. The frequency of otitis as a complication is insisted upon and the share taken by measles in the production of deaf-mutism is specially noted. Nor must we omit to mention the account given of the nervous complications and in particular of the forms of disseminated myelitis and sclerosis which have indubitably been traced to the action of the virus of measles. The remarkable association of measles with tuberculosis is noted, whilst attention is called to the paroxysmal cough simulating pertussis which may arise from pressure on the trachea by enlarged bronchial glands. The subject of prophylaxis is dealt with at considerable length and the treatment of the disease and its complications is well described. Dr. Forcheimer writes the article on German Measles, in which he adduces convincing arguments as to its independent existence; Dr. Dillon Brown (New York) writes on Chicken-pox, one notable feature of his article being the description of the "gangrenous" forms, which he attributes to secondary septic infection. Dr. Dawson Williams gives a short account of Glandular Fever, the recognition of which is of comparatively modern date. The article upon Whooping-cough is the conjoint work of Dr. Joseph O'Dwyer (New York) and Dr. Nathaniel R. Martin (New York), and is perhaps most remarkable for the suggestion that the use of intubation may be of service to obviate the spasm of the glottis which is the characteristic

and most alarming feature of the affection. Dr. O'Dwyer speaks with authority on intubation, but we cannot find that he has carried out the practice in pertussis to any extent. He does, however, refer to the temporary use of intubation in three cases of whooping-cough complicated by diphtheria. He recommends employing rubber rather than metal tubes. Of course, any rational treatment of an affection which seems to be little influenced by drugs is to be welcomed; but unless it be admitted that the glottic spasm is the main feature of pertussis and that the cough will not continue should such spasm be mechanically prevented it does seem as if the laryngeal tube would with difficulty be retained in place. Dr. Jacobi (New York) writes in his usual clear and convincing style upon Cholera Infantum. The article is of especial value for its demonstration of the great share taken in this affection by improper feeding, and the author's remarks upon infantile diet, the sterilisation of milk, &c., will be welcome to all practitioners. The influence of hot weather is a factor in the disease which may in part be ascribed to its effect in lowering the resistance of the organism, in part to the readiness with which foods undergo change under such atmospheric conditions. Dr. Rumpf (Hamburg) contributes the articles upon Cholera Nostras and Asiatic Cholera. They are exhaustive and thoroughly scientific, and it is interesting to find their author concluding, at the close of a detailed discussion of its etiology, that the essential cause of Asiatic cholera is the comma bacillus discovered by Professor Koch. To the experienced hands of Sir Joseph Fayrer (London) has been assigned the subject of Dengue, whilst that of Beri-beri is contributed by Dr. de Arvedo Sodré (Rio de Janeiro), who has no doubts as to the infectious nature of this remarkable affection. Dr. Netter (Paris) writes upon Miliary Fever, which is still prevalent in some parts of France, and which he identifies with the English sweating sickness of mediæval times. Lastly, Major David Bruce of the Royal Army Medical Corps writes upon Malta Fever, a disease with which his name is so well associated.

The Living Organism: an Introduction to the Problems of Biology. By ALFRED EARL, M.A., late Scholar of Christ College, Cambridge; of the Inner Temple, Barrister-at-Law. London: Macmillan. 1898. Pp. 271. Price 6*s*.

IT is difficult to say whether this book is best adapted for a beginner or for the advanced student. It is intended for the former but the latter will read it with most profit. The beginner has too few facts in his possession to enable him to appreciate such general statements drawn from the consideration of numerous observations as are here frequently introduced and many paragraphs might be cited which require and imply wide and accurate knowledge on the part of the reader. On the other hand, the advanced student is generally disposed to continue to accumulate his facts rather than to spend his time in the consideration of abstract statements which afford him but little information.

The author commences by pointing out that the acquisition of knowledge is a gradual process beginning with simple perceptions and progressing within certain limits for each individual to the more complex, and requiring, in order that advances may be made in any subject, exact observation and the exercise of the intelligence. Biology, which not only, like chemistry, deals with the substance, but in addition with the form and identity, of certain objects, may be defined as a certain body of connected knowledge which is derived from the observation of living objects and from reflections based on that observation. The nature of life is considered and the difficulty of framing any definition which embraces all its manifestations is dwelt upon. As a general statement it may be said that any conception of physical life deals with ideas of form and change associated with differences of structure and function, and it is to facilitate the study of these that generalisations and divisions of our knowledge are made. The several systems of organs and their functions in man are then briefly described, as those of digestion, circulation, respiration, absorption, assimilation, and excretion, and these processes are compared with the corresponding ones in other animals and contrasted with those changes which are taking place in plants, and the conclusion is arrived at that both locomotion and feeding are acts which appear to have as one of their constituent parts *an element of choice, and it is this element of choice which is the most distinctive feature of vital change*. The author then proceeds to discuss the object and method of classifying objects and he indicates the importance of development in this respect. He shows that authority—or the formulated opinions founded on observations of careful and experienced observers—is of great assistance to investigators as representing the highest point of positive comprehension that has been attained, though it may still happen that many exact opinions are erroneous, their quality of exactness bringing them within the scope of inquiry and discussion—a statement which is more curtly expressed by Bacon when he observes that "truth is more easily educed from error than from confusion." Succeeding chapters deal with the material basis of life, the organism as a chemical aggregate and as a centre for the transformation of energy, and the meaning of sensation. Little, of course, can be given on these subjects that is certainly known, but the author's end will certainly have been attained if these difficulties have been clearly indicated and in some cases surmounted.

Idiopathic Ulcerative Colitis (Dysentery). By JAMES F. GEMMEL, M.B. Glasg. London: Baillière, Tindall, and Cox. 1898. 4to, pp. viii.–140. Price 12*s*. 6*d*.

THIS monograph is mainly the outcome of the author's experiences at the County Asylum, Lancaster. It goes to show that "dysentery," which at one time figured largely in the records of prisons, barracks, and asylums, still tends to appear and at times to prevail epidemically, and this notwithstanding the improvements which modern science has introduced into the construction and hygiene of such institutions. Although employing the term "idiopathic" Dr. Gemmel gives us good ground to believe that the disease is of microbic origin. With his colleague, Dr. Goodliffe, he has succeeded in isolating and cultivating a bacillus which has certain characters in common with the bacillus coli communis and the bacillus typhosus but which in other features can be distinguished from these forms. The gross anatomical lesions are hardly to be distinguished from those of tropical dysentery and the treatment of the affection follows on much the same lines. It is interesting, however, to find that quinine in large doses has been more efficacious in treatment than ipecacuanha, whilst the value of irrigation by large enemata is admitted. The perusal of this work confirms our opinion that much has yet to be learnt concerning the pathology of these forms of ulceration of the colon, and we are grateful to Dr. Gemmel for his valuable contribution to the subject. The book is admirably printed and well illustrated.

A Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods. By CHARLES E. SIMON, M.D., late Assistant Resident Physician, Johns Hopkins Hospital, Baltimore. Second edition. With 133 Illustrations in Wood and 14 Coloured Plates. London: Henry Kimpton. 1898. Pp. 563.

THE fact that a second edition of this work was called for in two years is sufficient evidence that the first met with the success which it deserved. Within the past

ten years a large number of books have appeared dealing with the value of the microscope and chemical analysis as aids to diagnosis and much advance has been made in this direction. Dr. Simon's volume has been brought well up to date. The parasitology and bacteriology of the blood, saliva, fæces, urine, and vaginal discharge have been almost entirely rewritten. New methods of chemical examination which have appeared since the publication of the first edition have been embodied in the work and some of the older and complicated ones have been omitted. We have found the different matters dealt with most completely described, the various chemical processes are clearly explained, and the microscopical technique will be clearly understood.

The chapter on Transudates and Exudates is an interesting one and contains information not usually found in text-books. Other chapters are also given on the Examination of Fluids which are usually neglected, although much useful knowledge might be obtained if they were more frequently submitted to chemical analysis and microscopic observation, such as the cerebro-spinal fluid, vaginal discharges, and the secretion of the mammary gland. The illustrations in a work of this kind are a very important feature, and in this matter Dr. Simon is certainly to be congratulated. A large number of them are borrowed and are of none the less value on that account, but many are original. Especially good are those depicting the parasites found in connexion with malarial fever; the methods of observing these organisms and the many varieties which are met with are very well given. The author has given this study a great deal of attention, for he thinks it "must be regarded as one of the most important in clinical medicine." Those who wish for detailed information on these parasites cannot do better than consult this work. The sections on the chemistry of the urine, too, contain a large number of useful hints, especially in the varieties of albuminous bodies which may be found. We can cordially recommend the book to our readers, both as a handbook to the clinical laboratory and also as a work of reference.

Les Cancers Epithéliaux: Histologie, Histogénèse, Etiologie, Applications Thérapeutiques. Par FABRE-DOMERGUE, Docteur ès Sciences, Chef de Laboratoire à la Faculté de Médecine de Paris. (*Epithelial Cancers: Histology, Histogenesis, Etiology, Treatment.* By FABRE-DOMERGUE, D.Sc.) Paris: Georges Carré et C. Naud. 1898. Pp. 462. Prix 30 fr.

THIS handsome volume, which, in point of paper, printing, and illustrations, leaves nothing to be desired, is devoted to the study of the cancers properly so-called, mainly from the structural and developmental standpoint. The author shows a profound familiarity with his subject and places his facts before the reader in a manner calculated to inspire confidence. Any contribution to more intimate knowledge of malignant disease is welcome, and if, as in this instance, the result is to show how much yet remains to be known such work cannot be without its value. Dr. Fabre-Domergue shows that he is entitled to speak with authority in microscopical anatomy and therefore the conclusion at which he arrives—after very full discussion—that the so-called coccidial parasites are only changes in the cell protoplasm must be held in respect. To those interested in this subject we recommend a careful study of the chapters which are devoted to this exposition. They abound in details and arguments which can be best appreciated by pathological histologists. The author does not deny the possibility of parasitism as a cause of cancer, but he endeavours to show that the case is not proven. It must not be supposed that the discussion of this question occupies the main part of the work. On the contrary, the development, relationships, and intimate structure of carcinoma—epithelial and glandular—may be said to form the basis of what constitutes a most interesting and valuable contribution to pathology.

LIBRARY TABLE.

Physiology, Experimental and Descriptive. By BUEL P. COLTON, Professor of Natural Science in the Illinois State Normal University. London: The Scientific Press. 1889. Pp. 423. Price 6*s.*—This, on the whole, well-written little book is suited for the upper classes in ordinary schools and contains the information in respect to the structure and functions of our bodies which should be possessed by every young man or woman entering life. The method adopted is to describe shortly but intelligibly the several organs, as the heart, lungs, kidneys, &c., but without going into very minute histological details. The function of each of these is described and in many instances illustrated by original and instructive diagrams. Directions are given that are appropriate for a teacher with a class before him and, finally, some simple experiments are appended which can be easily carried out either by the master himself or by the members of the class. The author has submitted his book to a considerable number of experts whose criticisms and suggestions he acknowledges in the preface to have been of much assistance to him, and as several of these gentlemen are inspectors of high schools, professors, and teachers, in the different States, the book may be considered as being issued with their approval and to represent the high-water mark of school education in America.

Phonographic Outlines of Medical Terms. Issued by the Society of Medical Phonographers. Second edition. 1898. London: Sir I. Pitman and Sons, Limited. Manchester: G. Pulman and Sons. Price 2*s.*—Although this is called a second edition it is practically a new book, for not only has the list of outlines and contractions been extended from some 2500 to about 3000, but a most useful list of similar words—i.e., words having the same phonographic outline and distinguishable only by vocalisation or position—has been added. To get the greatest amount of help from phonography it is necessary to habitually use the outlines which practice and experience have marked with approval and, for the most part, the outlines recommended in this list can be approved, but, as remarked in our notice of the first edition,[1] it is doubtful whether all experienced phonographers will endorse with approval all the forms shown. Upward and onward should generally be the guiding maxim in the choice of outlines, all other things being equal, and such niggling abominations as half-sized downward *h* and half-sized *t* for hydatid should be avoided. No student of phonography should neglect to study the list of similar outlines or to carefully peruse the deviations from the orthodox system which go so far to make phonography as here presented almost perfect for medical reporting.

Methods of Staining the Central Nervous System. By Dr. BERNHARD POLLACK. Translated from the second German edition by WILLIAM R. JACK, M.D., B.Sc. Glasg. Glasgow: F. Bauermeister. 1899 (*sic*). Pp. 132. Price 4*s.*—This is an exceedingly convenient reference book for those who are engaged in histological research, but it will be found too advanced for the beginner. The more widely-used methods, such as Nissl's, Marchi's, and Golgi's, are described in very full detail and there is an excellent account of Weigert's complicated stain for the neuroglia. An adequate account is also given of almost all the staining methods at present employed in neurological research. There are a good bibliography and a full index which will add to the value of the book.

JOURNALS AND REVIEWS.

The Journal of State Medicine. Vol. VI., No. 10. October, 1898. Baillière, Tindall, and Cox. Price 2*s.*—Much of this volume is taken up with the matters relative to Ireland

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[1] THE LANCET, Feb. 1st, 1896, p. 299.

which were apparently brought before the members at the last meeting of the Institute of Public Health at Dublin. Mr. Cotton, M.I.C.E., furnishes an account of recent sanitary legislation in Ireland, and Dr. J. W. Moore a very readable paper on Ireland: its Capital and Scenery. Mr. Richard Kelly discusses the existing sanitary law and its possibilities, and the leading articles have reference amongst other subjects to typhoid fever in Belfast and to the East London water famine. We note that the forthcoming Harben lectures are to be delivered by Sir Richard Thorne.

The Journal of Anatomy and Physiology. Conducted by Professor Sir WILLIAM TURNER, Professor D. J. CUNNINGHAM, Professor A. MACALISTER, and Professor J. G. M'KENDRICK. Vol. XXXIII., Part. 1. October, 1898.—The contents of this part are: 1. The Significance of Anatomical Variations, by D. J. Cunningham, F.R.S. 2. A Study of the Arrangement of the Muscular Fibres at the Upper End of the Œsophagus, by A. Birmingham M.D.R.U.I., of Dublin. 3. The Arrangement of the Muscular Fibres of the Stomach, by A. Birmingham, M.D.R.U.I., of Dublin. 4. The Marsupial Larynx, by Johnson Symington, M.D. Edin., of Belfast. 5. An Interesting Case of Connexion between the Lungs and Systemic Circulatory System and of an Abnormal Hepatic Blood-supply in a Frog, by George P. Mudge, A.R.C.S. Lond. 6. A Case of Uterus Masculinus—Tubular Hermaphroditismus—in a Male, with Sarcomatous Enlargement of an Undescended Testicle, by A. Primrose, M.B. Edin., of Toronto, with a Plate. 7. A New Dissection, showing the Internal Gross Anatomy of the Hippocampus Major, by J. G. M'Carthy, M.D., of Montreal. 8. Note on a Fœtus of Gorilla Savagei, by W. L. H. Duckworth, M.A., with illustrations. 9. The Action of Certain Drugs and Mineral Waters on the Secretion and Composition of Human Bile, by William Bain, M.D. Durh. 10. The Peripheral Distribution of the Cranial Nerves of Ammocœtes, by R. Alcock, student of Newnham College, Cambridge, with a plate. 11. On the Origin of Vertebrates Deduced from the Study of Ammocœtes, by Walter H. Gaskell, M.D. Cantab., F.R.S., with two plates. The last article is the eighth report of the Committee of Collective Investigation of the Anatomical Society of Great Britain and Ireland for the year 1897-98.

Archives de Physiologie. Cinqième série. Tome x., No. 4. Paris: Masson et Cie. Octobre, 1898.—The articles contained in this part are the following:—1. Development of the Guinea-pig, by Charles Livon and H. Alezais. 2 Resistance of the Human Body in the Period of the Variable State of the Galvanic Current, by Dr. Dubois of Berne. 3. On the Existence in Mammals of an Oxydase-Globulin with an account of its Characters and Properties, by MM. J. E. Abelous and G. Biarnès of Toulouse. 4. On the Action of some Antiseptics on Soluble Ferments, by M. A. Treyer of Fribourg, Switzerland. 5. Analysis of the Thermic Phenomena which prepare, accompany, and follow Death by Refrigeration, by M. J. Lefèvre. 6. The Denitrifying Power of the Bacillus of Eberth, by MM. Hugouneng and M. Doyon. 7. Transmission of Toxins from the Fœtus to the Mother, by M. A. Charrin. 8. Researches on the Physiology of the Optic Thalamus, by MM. J. Sellier and H. Verger of Bordeaux. 9. Changes in the Nervous System Consequent on Burns, by Dr. Carlo Parascandolo of Naples, with a plate. 10. A Case of Tumour of the Pons with Degeneration of the Band of Reil, by M. E. Long. 11. Thermogenesis in Tetanus, by MM. D'Arsonval and Charrin. 12. Influence of the Thyroid Juice on Muscular Energy and Resistance to Fatigue, by M. A. Mossé of Toulouse. 13. Sources of Animal Heat, by M. F. Laulanié. 14. The Relation between the Size of the Body and the Development of the Encephalon, by MM. Dhéré and Louis Lapicque, with a plate. 15. Contribution to the Physiology and Pathology of the Labyrinth in Man, by Dr. Max. Egger. 16. The Application of the Radiograph to the Determination of Distances by Means of the Superposition of Two Stereoscopic Couples, by MM. T. Marie and H. Ribaut. 17. On Lipase, by M. M. Hanriot.

Dublin Journal of Medical Science.—The original communications are on the Duties of the Community with regard to Tuberculosis, by Dr. Joseph O'Carroll, and on Ireland, its Capital and Scenery, by Dr. J. W. Moore. There is a long article on Medical Education and Examinations in Ireland.

Scottish Medical and Surgical Journal.—The principal paper is one by Dr. William Russell, the editor, on the differentiation of cardiac murmurs. An entertaining article headed "As Others See Us" consists of a translation of the description of the recent meeting of the British Medical Association published in the *Deutsche Medicinische Wochenschrift.* A section on Medical Education in Scotland will be found useful by students.

Caledonian Medical Journal.—The principal feature is an address on Some Highland Doctors of the Past, delivered by Dr. Alexander Macdonald, President of the Caledonian Medical Society, at the eighteenth annual meeting of the society in Edinburgh last July. At the annual dinner held the same evening the menu and toast list, both of which were of some length and have been reproduced in the *Journal*, were entirely in Gaelic; "cofi," which comes last of all in the menu, is the only word intelligible to the ordinary reader.

Edinburgh Medical Journal.—Dr. Andrew Davidson discusses the Malaria Problem in the Light of Epidemiology, pointing out that epidemics of malaria connected with soil disturbance, the prevalence of the disease in extremely cold regions of Russia, and some other malarial conditions, have not hitherto found an explanation in accordance with the mosquito theory of transmission. Mr. Adams Frost describes the Operative Treatment of High Myopia, a method resuscitated by Fukula in 1889. Mr. Frost considers that the operation is of great benefit to myopes of not less than 15 D., enabling them to go about without glasses and, as a rule, giving them better vision than they formerly had with glasses. The treatment usually extends over a period of three months. Mr. Frost needles the lens freely at the first sitting. Dr. James Mackenzie (Burnley) has a very interesting paper, illustrated with sphygmograms, on the Alleged Retardation of the Pulse in Aortic Regurgitation. In place of the apparatus with a large revolving cylinder he used a much more convenient arrangement in which a tambour is combined with a Dudgeon's or von Jacquet's sphygmograph. His observations showed that there is no more retardation of the pulse in aortic regurgitation than there is in health. There is an Appendix of 36 pages on Medical Education in the United Kingdom and the Principal Public Medical Services.

The *Phonographic Record* for October contains a short but useful contribution by Sir William Gowers, suggested by a case of wrist-drop in which no blue line on the gums could be seen by the naked eye. With a 3-in. lens, however, a complete but narrow line was seen on the lower gum, whilst the points of gum between the teeth presented in many instances a decided black mark. A paper by Dr. Benson Cooke on the Palliative Treatment of Chronic Disease of the Uterine Appendages, Notes on a Case of Anomalous Convulsions and Pyrexia following Influenza by Dr. F. H. Spooner, an Account of the Post-mortem Examination of King George the Second, which was noticed in THE LANCET of Oct. 15th, and Notes of the Post-mortem Appearances in a case of Gunshot Wound of the Head complete the number.

The Student.—This magazine, published by the Students' Representative Council, Edinburgh University, contains a portrait of Dr. Robert Muir, recently appointed Professor of Pathology at St. Andrews University. A short account of his past appointments and his scientific work is also given.

THE LANCET
Analytical Commission
ON
SHERRY:
ITS PRODUCTION, COMPOSITION, AND CHARACTER.

Introduction.

BY an obviously easy transition the "vino de Jerez"[1] became in the English language shortly *sherry*. Some hold that the derivation of Xeres, or, as it is now more commonly spelt Jerez, is from the Greek word Ξηρος, dry, and we have the words "seck," "sac," and in French "sec" applied to a dry wine, or a wine free from sweetness. Strictly speaking, therefore, sherry should mean Jerez wine and undoubtedly Jerez is the home of sherry. But "Manzanilla," a wine which is produced close by at San Lucar, to the west of Jerez, and "Montilla," a wine produced at Montilla, a town south of Cordova, are famous wines which come under the same category. Sherry, again, in the British Pharmacopœia is known as "vinum Xericum," and it is the only wine enjoined in the preparation of the wines of the Pharmacopœia except two—viz., vinum ferri citratis and vinum quinine, which were made with orange wine. Thus sherry is directed to be used in the preparation of vinum aloes, vinum antimoniale, vinum colchici, vinum ferri (iron wire dissolved in sherry), vinum ipecacuanhæ, vinum opii, and vinum rhei. Sherry was originally employed for this purpose, doubtless to render the drugs indicated less objectionable to the taste and partly because it proved to be a good solvent of active principles and is in itself distinctly tonic in character. In the British Pharmacopœia of 1824 it is interesting to note that diluted spirit was substituted for wine without altering the name of the preparation, but the use of sherry was restored in 1836. We shall point out later why probably it was found that diluted spirit could not be substituted for sherry in the way which had been proposed. This is an interesting point in connexion with the chemical composition of sherry which, as we shall see, distinguishes it from most other wines, and in which some explanation may be found of the advantage experienced in practice of employing sherry as a menstruum. In the Pharmacopœia the only test described is that for salicylic acid, the recourse to which is exceedingly improbable, since, as is well known, sherry possesses remarkable keeping powers, due in part to its alcoholic strength and in part to its richness in antiseptic aromatics.

In defining sherry we may very properly call it a wine which is peculiar to Spain and essentially Spanish. There is no genuine wine like it produced in other countries. Of course, as with all good and genuine things, there is the counterpart in fictitious substances and there is undoubtedly much stuff sold in England as sherry which was more likely produced in Hamburg or in any other place than Spain but of which not a single drop ever found sustenance on the soil of Spain or flourished under the remarkable influences of the Andalusian sun. With these imitations we do not propose to deal, but having the real significance and meaning of the word "sherry" in mind it is clearly a fraud to pass off such decoctions as Jerez wine. It is akin to calling a spirit Cognac which is produced in the colonies or elsewhere. In referring to sherry, therefore, we must be taken to mean "vino de Jerez" or the well-known white wine produced in the province of Andalusia in Spain. There is no soil or similarly favoured environment other than that of the province mentioned which can produce wine of the peculiar character of sherry. The vines of Jerez, were they transplanted further afield or to other countries, would produce grapes which would fail to yield the same character of wine; they would miss the peculiar climatic conditions which give rise to a peculiar wine. Moreover, the great life process of fermentation is profoundly modified by external conditions; and the external conditions—soil, sun, and air, &c.—in the vineyards at Jerez and the adjacent districts produce sherry and sherry alone.

[1] Pronounced "herreth," the "her" as in herring.

The Production of Sherry.

By far the greatest quantity of sherry is produced at the sherry centre of the world, Jerez de la Frontèra. Chemistry and biology have not been brought to bear upon the production of sherry to any extent, and when the application of scientific principles has been tried the result has invariably spelt failure; but, doubtless, as the biology of the organisms concerned in the fructification of wine is better understood there will be greater certainty of the success of a vintage. Indeed, the conversion of the juice of the Jerez grape into sherry is the simplest possible process; it is essentially and purely a natural operation, and the grower is content to be an onlooker of this natural process with little power to influence its progress either for bad or good. Specific characters are, however, gradually developed by different butts of wine, or a wine may lack certain characters, and then the skill of the sherry grower comes into evidence. He cultivates the character he requires by inoculating a wine, as it were, with the properties of one of established excellence. Without going into minutiæ this is the so-called "solera" system. The solera wine, so to speak, is the breeding ground or mother liquor, on which young immature wines are placed to develop delicacy, refined taste, and good character. The "solera" is drawn upon again and again for blending and the quantity so abstracted is made up by the addition of a wine which in its turn requires this wholesome infection. Thus by a very interesting and beautiful method of culture depending upon the inherent properties of the fermented juice itself are the aroma, bouquet, and fragrance which are so marked a characteristic of sherry handed down from generation to generation of vintages, and the palatable and peculiar flavours of a sherry may happen to have descended from a wine perhaps three centuries or even a greater number of years old.

There are several types of sherries according to the different characters developed. These are known by several distinguishing terms comprehending the characters and specific qualities of the wine from one end to the other of a scale ranging from delicate and light wines to rich, generous, and dark-coloured wines. Broadly, however, sherry may be divided into two classes—the so-called "fino," a light-coloured, pale, delicate, light wine of the Amontillado or Manzanilla type, and the so-called "oloroso," a full-bodied, highly-developed brown wine. Intermediate in character—that is, between the "fino" and "oloroso" type—may be mentioned the wine classed as "palo cortado." All classes are produced in the several districts, but the wine of each district has its own peculiar characters. San Lucar, close by Cadiz, is famous for its delicate light wine (of the "fino" type), "Manzanilla," which is said to possess a faint flavour of camomile flowers, and in Montilla a particularly fine wine is produced presenting a most delicate bouquet and taste, sherries resembling Montilla wine but produced in Jerez being known as "amontillado"—that is, *à la Montilla*.

The Sherry Bodega.

The bodega is the sherry nursery. In reality it is an overground cellar and usually consists of a very large, lofty, and capacious building containing hundreds, and often thousands, of butts of wine in different stages of development. The interior of the building is kept as cool as possible and away from the influences of the sun, while the arrangements are such that a current of cool air is constantly passing through and ventilation is thus efficiently secured. It is here the tasting of wines goes on from day to day and changes are made according to the resulting observations. It is here the skill of the grower is chiefly centred and his delicate sense of smell and taste

is constantly employed in order to note what qualities his wines may be developing. Sherry, unlike most other wines, may be stored in butts freely open to the air; the wine improves rather than deteriorates under these conditions and becomes more "made," as it is said—that is, advanced in the direction of developing bouquet and delicate flavour. With the light delicate wine known as "fino" a "flor" or microscopic plant (mycoderma vini) develops on the surface which is highly regarded as the agent concerned in contributing excellent characters to this class of wine. Obviously such a wine cannot be bottled till the "flor" has ceased to grow, as otherwise an unfinished wine with murky appearance would be the result. The bodegas contain wines of every description and type and almost of every age, varying from a hundred years' to the last year's vintage. Sherry is pre-eminently a wine which improves with age and to this age there is no limit, the changes going on being chiefly in the direction of etherification and concentration of "vinosity." The bodegas and all premises connected with the production of sherry are quite open to the inspection of the interested visitor, and it may be added that practically three-fourths of the industry are carried on by English people.

The Nature of the Soil upon which the Sherry Grape Grows.

The Jerez vineyards are situated within a few miles to the north-west of the town itself on a series of undulations stretching right away towards San Lucar, which is on the coast just a little to the north of Cadiz, whence all the sherry produced is shipped to England and elsewhere. The soil is of a porous character, light, and of a greyish colour. Its approximate composition, according to an analysis made in THE LANCET Laboratory, is as follows:—

Analysis of Soil.

	Per cent.
Calcium carbonate	29·12
Oxide of iron, &c.	4·08
Sand, &c....	45·80
Soluble salts	0·50
Moisture	16·70
Loss on ignition	3·80
	100·00

Practically, therefore, a third part of the soil consists of carbonate of lime, an observation of some importance to which we shall have occasion to refer. The vines present the appearance after vintage of a group of gnarled stumps of an average of two feet in height. The grape is small and white. Vintage time is a harvest scene which is one of the most impressive spectacles in Spain.

The Sherry Wine-press.

The grapes are collected and placed in large panniers on the backs of mules and conveyed to the press-house. There are in some instances press-houses situated on the vineyards, but more often the grapes are pressed on premises connected with the bodegas in the town, and the string of mules so laden at harvest time on their way to the bodegas is a very picturesque sight. The "lagar," or press, is of primitive construction and identical still with the presses described in ancient history. It consists simply of a wooden trough about ten feet square provided in the centre with a screw press, which is used after the treading by foot power is done to express the final juice from the crushed mass. Rather less than a ton of grapes—or to be more accurate 1800 lb. (812 kilogrammes)—serves for one pressing. Men clad in light clothing and provided with a kind of wooden clog with nails on the soles and heels, pointing in a slanting direction, then proceed to tread the grapes in a perfectly methodical manner, proceeding row by row, each row being of the width of the pressing clog or boot. It is said that the average weight of a man is just sufficient to press out the juice without injuring the skins or branches, the bitter substances in which, if expressed, would give an objectionable character to the wine. It cannot be supposed, however, that modern ingenuity could not contrive a mechanical means of pressing the grapes to comply with these requirements and thus meet an objection which might be raised to a method and custom of which we read in the most ancient of ancient history. After the grapes have been trodden over for the first time, that is to say, partly crushed and bruised, a measured quantity of sulphate of lime ("yeso") is sprinkled over the sticky mass. The sulphate of lime employed is a pure native earth occurring in large quantities in the neighbourhood of Jerez. It is first burnt. Its analysis made in THE LANCET Laboratory is as follows:—

Analysis of Sulphate of Lime ("*Yeso*").

	Per cent.
Insoluble matters	2·30
Calcium sulphate	83·57
Calcium carbonate	4·57
Potassium sulphate	1·48
Moisture, &c.	8·08
Total	100·00

"Yeso" consists practically therefore of sulphate of lime with a small proportion of carbonate of lime; it is commonly added in the proportion of a little over a kilogramme (1140 grammes, or 2½ lb.) to a load of grapes weighing nearly a ton (1800 lb., or 812 kilogrammes). The grapes having been thus trodden several times the residue is swept up around the screw (branches first being picked out and thrown away) and bound up in a heap with strips of woven esparto grass and the press screwed down. This proceeding expresses more juice, which trickles away and joins the bulk previously expressed in a butt placed to receive it. The average yield of liquor or juice is 110 gallons, or 500 litres (i.e., about the capacity of a butt) per 1800 lb., or 812 kilogrammes, of grapes crushed. The butt is then placed in a convenient place and the juice is soon in an active state of fermentation, the temperature rising considerably. The fermentation subsides in about three weeks, when the wine immediately begins to clear. After a time the wine is "racked" or drawn off the lees or slimes and placed in other butts. In this condition it is known as "mosto." This is in reality young wine, and from this stage its progress is watched with the greatest care. How it will turn out nobody can tell. Time alone decides. It may develop into a "fino," a delicate light wine, breeding a "flor" and flowery bouquet and taste, or it may go into a highly vinous liquid developing the vigorous "oloroso" character, or it may become diseased, developing objectionable fungus, and go into vinegar or remain a vinous liquid of indifferent character. The sherry-grower would like to be able to control it at this point so as to get a result he would desire, but he is entirely in the hands of nature's caprices, preferring to wait and abide the result rather than resort to artificial correctives.

The Part Played by Sulphate of Lime.

The addition to the crushed grapes of a definite quantity of sulphate of lime has given rise in recent years to considerable discussion as to the advisability or even legitimacy of the proceeding. This recourse at any rate has existed as long as sherry has been known and this must have been from time immemorial, since Pliny, for example, says that it is an ancient African system.[2] Again, Shakespeare puts into the mouth of Falstaff the words, "There's lime in this sack." In modern days the process has become known as "plastering" from the fact that plaster-of-Paris consists principally of sulphate of lime or burnt gypsum. "Yeso" the Spaniards call it. It is interesting to surmise the origin of this very ancient custom. That it had some intelligent basis admits of no doubt. Some think that it had its origin in the fact being noticed that when the grape juice was fermented in alabaster vessels or in marble tanks the wine was better, it clarified quicker, and developed character more satisfactorily. Others regard the addition of sulphate of lime as convenient from a mechanical point of view during the pressing; it was necessary when the grapes were wetter than usual in order to bind the residuary mass together. We do not incline to this view.

According to many experiments which we have made we are disposed to think that the following is the correct explanation. It has at all events a very reasonable basis. The soil upon which the sherry grapes are grown consists, as a reference to the above analysis will show, of nearly one-third part of calcium carbonate or chalk, so that if the soil upon which the grapes actually grow were substituted for the sulphate of lime a similar, though it must be admitted not precisely similar, result would be effected. The result at any rate would be the same in regard to clarification and probably also in regard to development of character in the wine, provided the carbonate of lime in the soil or the soil itself were not in large excess. It is conceivable, therefore,

[2] Pliny: Natural History, Book xiv., p. 19.

that centuries and centuries ago it was observed that when a greater quantity than usual of soil was adhering to the grapes a better and more satisfactory "mosto" and wine were produced owing to the lime salts. It is not difficult to imagine that in some seasons the quantity of soil blown upon the grapes by the wind and fixed there by the stickiness of the fruit would be increased. This observation being remarked it was but an easy step to resort to what appeared to be a better, as it was a purer and whiter, soil for the purpose. And close by the vineyards occurs "yeso," a white earth containing for its principal ingredients sulphate and carbonate of lime, and this it seems probable was dusted over the grapes to imitate an action which frequently took place naturally. Whatever may be the explanation of the custom of dusting the grapes with sulphate of lime one thing seems clear, and that is that without exception every experienced sherry-grower is positive in stating that if this custom be omitted the result is a wine devoid of those special characteristics which distinguish sherry from other wines. We shall see presently how this experience of the sherry-grower is supported by the evidence gained on a careful analytical examination of wines produced both with and without the previous addition of sulphate of lime.

The addition of sulphate of lime effects one important change. It reacts with the tartrates or malates of potassium in the grape and yields in the resulting wine sulphate of potassium largely, but not entirely, in the place of these salts. Our own experiments show conclusively, we think, that the result may be represented in the following equation:—

$$2KHC_4H_4O_6 + CaSO_4 = K_2SO_4 + CaC_4H_4O_6 + H_2C_4H_4O_6.$$

The result of adding sulphate of lime, therefore, is to convert part of the potassium acid tartrate ($KHC_4H_4O_6$) into potassium sulphate (K_2SO_4), insoluble tartrate of lime ($CaC_4H_4O_6$) separating and going down with the lees, effecting rapid clarification (and as we shall presently show an important degree of fining), and leaving a large proportion of the original tartrate in the clear wine as free tartaric acid. The change will be understood more clearly if we consider first the composition of the lees or slime obtained in fermented grape juice ("mosto") previously treated with sulphate of lime and compare this with the composition of the slimes or lees deposited in "mosto" untreated with sulphate of lime. The analyses of the two deposits are as follows and the results are placed side by side for the purpose of admitting of ready comparison.

Analysis of Lees from (1) "Mosto" with Sulphate of Lime, and (2) "Mosto" without Sulphate of Lime.

	(1) Per cent.	(2) Per cent.
Alcohol and water	73·86	77·76
Albuminoids	4·93	3·96
Potassium bitartrate ...	3·02	6·30
Calcium tartrate	7·38	2·82
Tartaric acid	1·50	0·71
Potassium sulphate	0·62	0·30
Potassium phosphate ...	—	0·03
Calcium sulphate	0·61	0·34
Gummy matters	8·08	7·78
Total	100·00	100·00

There are some interesting and important differences here which after all are just what might have been anticipated, but so far as we are aware the comparative analyses of lees from treated and untreated wines have not hitherto been put on record. The differences in composition of the two lees bring out at once the advantage of the treatment, at any rate from the sherry-growers' point of view. We will consider the results from other points of view presently. The lees of wine which have been treated previously with sulphate of lime contain a greater proportion of organic matters than the lees of a wine not so treated, consisting of just those matters, such as albuminous bodies, which are likely if retained in the wine to make it susceptible to objectionable changes and deterioration. Again, tartrate of lime in lees of previously treated wine occurs largely, but not entirely, in the place of acid tartrate of potassium in the lees of untreated wine, but it will be observed that in the latter tartrate of lime is also an important constituent. The lees of treated wine further contain an increased proportion of free acid.

With these important differences fresh in the memory in regard to the composition of the lees of wine previously treated and untreated with sulphate of lime we may next in order show the differences in composition between the same wines racked off the lees—i.e., the clear young wines decanted from the deposits, the interesting difference in the composition of which we have just considered.

The Analysis of (1) "Mosto" previously treated with Sulphate of Lime and (2) of "Mosto" not so treated.

	(1) Per cent.	(2) Per cent.
Solid matters	2·16	1·88
Sugar	0·37	0·23
Potassium bitartrate ...	0·093	0·28
Tartaric acid	0·338	0·21
Acetic acid	0·09	0·05
Mineral matter	0·37	0·23
Potassium sulphate ...	0·34	0·085
Potassium phosphate ...	—	0·041
Alcohol by weight ...	11·62	10·85
Alcohol by volume ...	14·37	13·43
Proof spirit	25·18	23·54
Alcohol in volatile ethers ..	0·0214	0·0071
Alcohol in fixed ethers ...	0·0382	0·0172
Total alcohol in ethers ...	0·0596	0·0243

It will be seen that in these important results we have complete confirmation of the view expressed in the equation above; that the changes induced by the addition of sulphate of lime are the formation of sulphate of potassium in the wine, the separation in the lees of tartrate of lime, and the production of free tartaric acid. Thus the potassium acid tartrate in the untreated wine amounts to 0·28 per cent., whereas in the treated wine it is only 0·093 per cent., just one-third the quantity. It is important to note, however, that not all the acid tartrate of potassium has been removed. The quantity of potassium acid tartrate reduced is in proportion to the increase of free tartaric acid. Further, while the untreated wine contains 0·085 per cent. of potassium sulphate the treated wine contains 0·34 per cent., or just four times as much.

The two young wines (or "mosto") were produced side by side at the same time, they were racked at the same time, and the deposits or lees were collected at the same time. The deposit in the butt of the treated wine was considerably bulkier than that from the untreated wine.

The Effect of Sulphate of Lime on the Development of Ethers.

There is another point of considerable interest brought out in this analytical contrast and that is in regard to the ethers. The fixed ethers may be looked upon as contributing the peculiar flavour of wine and the volatile ethers the aroma. The type of the former is ethyl tartrate and of the latter ethyl acetate. Now although these wines were produced from grapes of the same vintage, were crushed, fermented, and racked at the same time and were of precisely the same age—though that was only a few months—yet there is a great and important difference in the amount of ethers. In the wine treated with sulphate of lime they are more than double in amount that of the wine not so treated. The explanation, we think, is not far to seek.

As already pointed out one effect of treating grape juice with sulphate of lime is to liberate free tartaric acid in the wine. In other words, the fixed acids of treated sherry are largely in a free state while in untreated sherry they occur in the form of the acid salt of potassium. In the former case alcohol being in the presence of free organic acid would, it may fairly be assumed, readily combine with the acid to form ethyl tartrate or other ethers of wine. In a word, the treatment with sulphate of lime stimulates etherification.

Two very simple experiments confirm this view. Five grammes of acid tartrate of potassium were repeatedly shaken up with 100 cubic centimetres of distilled water and the acidity of the clear solution was measured. Next, a precisely similar liquid was prepared, but this time a little sulphate of lime was added. The acidity was found to have increased by over 50 per cent. Part of the insoluble acid tartrate of potassium had been converted into tartrate of lime and free tartaric acid, and the latter being more soluble went into solution and increased the acidity accordingly. Further, when an excess of acid tartrate of potassium was shaken up with alcohol of the same strength as sherry and allowed to remain for some time, and the same process repeated, but with free tartaric acid instead of acid tartrate

of potassium, the amount of ethers when estimated in the latter at the end of the experiment was found to be nearly three times as much as in the former. The fact, again, of sherry containing free tartaric acid in place of the acid potassium salt explains the adoption of sherry in the Pharmacopœia and the probable reason why diluted alcohol was not found an efficient substitute for sherry for this purpose. As is well known tartaric acid is an excellent solvent of the active principles of drugs and as we have already pointed out sherry is used in conjunction with several drugs of the Pharmacopœia. Sherry, again, is for the same reason a solvent of iron, an organic salt of iron being formed.

Further, the fact that tartaric acid occurs in sherry largely in the place of the acid potassium salt by reason of the sulphate of lime treatment affords a very probable explanation of the fact that sherry excels all other wines in regard to etherial contents and possibly also the beneficial influences gained by storing whisky in sherry casks may have some connexion with the same fact. It explains also the stimulating and well-known tonic power of sherry compared with other wines, for as we shall see presently the ethers in old sherry amount to a very high proportion never attained by other wine, and this suggests an explanation of the extraordinary stimulating powers of old sherry which it is said is not possessed to the same extent even by real old Cognac. This stimulus which the changes effected by treatment with sulphate of lime give to the formation of ethers is of great interest in regard to what every sherry-grower maintains—namely, that without such treatment a wine of good, delicate, and generous character cannot be produced. The sherry-grower judges and values his wines by smell and taste and these senses are cultivated to a remarkable degree of refinement which enable him to anticipate the fate of a wine for good or for worse. In putting wine through these simple tests is he not making in reality an estimate of the volatile and fixed ethers, the former by smell and the latter by taste? In that case his judgment is completely and conspicuously confirmed by minute analyses which show that sherry previously treated with a small quantity of sulphate of lime contains and develops a more marked etherial character than sherry not so treated. By experience he has learned this difference and analysis shows his experience to be correct. Analytical and experimental chemistry would appear here to offer some explanation for the time-honoured adoption and the continuation of a process which has been in practice for probably more than a thousand years.

Sulphate of Potassium in Sherry.

We have next to consider the question and significance of the occurrence of potassium sulphate in the wine in the amount which our analyses of several types of sherries show. At the outset it should be pointed out that sulphate of potassium is not a foreign constituent of the grape or of the wine produced without any intermediate treatment with sulphate of lime at all. Further, grapes contain a definite quantity of calcium salts. These constituents are of course extracted from the soil and it follows that the soil must contain them. The particular soil which we examined did not appear to contain any important quantity of sulphates, but as a rule these salts are common constituents. In all the published analyses of grapes we find sulphate of potassium recorded as a constituent of the mineral matter; hence the soil must have contained this salt or its elements. These points are further developed in an analysis made in THE LANCET Laboratory of the Palomino grapes taken from the Jerez vineyards.

Analysis of Grapes.

	Per cent.
Water	74·05
Organic matter	24·94
Mineral salts	1·01
Total...	100·00

Percentage Composition of Mineral Salts of Grapes.

	Per cent.
Calcium and magnesium salts (carb. sulph. phosph.)	46·30
Potassium sulphate	10·70
,, carbonate	31·78
,, phosphate	11·22
Total...	100·00

Thus a tenth part of the mineral matter of the grape is potassium sulphate, and lime salts including the sulphate occur in large proportion. Accordingly, we found in the lees of untreated wines, as also in the lees of treated wines, tartrate of lime in addition to the normal potassium salts (tartrates), but obviously in smaller amount. We have examined several untreated wines and what may be called as the normal amount of potassium sulphate was found to range from 0·056 per cent. to as much as 0·15 per cent. It is clear, therefore, that potassium sulphate is a normal constituent of wine, amounting at times to nearly half the quantity contained in the so-called "plastered" wine.

The French Government have a prohibition order forbidding the importation of wine into France containing more than 2 grammes per litre (0·2 per cent.) of potassium sulphate, but the wine thus imported is chiefly used for blending, and for this purpose a specific and delicate character is not indispensable. The restriction appears to have been the outcome of economic rather than of hygienic considerations. In bad years in the vintages of France the regulations in regard to the character of imported wines are less rigidly imposed than in prosperous seasons. The question as to whether sulphate of potassium, in the quantity in which it occurs in wine, is responsible for injury to health has been the subject of considerable discussion for some time, and recently it has been revived in France, notably by M. Lancereaux in a paper read before the Academy of Medicine. It may be pointed out that treatment with sulphate of lime is not peculiar to sherry but, as we have found by experiment, it is applied also to certain clarets and to Marsala. M. Lancereaux's views and the discussion arising upon the public expression thereof will be found conveniently summarised in the following numbers of THE LANCET: Sept. 18th, 1897, p. 748; Oct. 23rd, 1897, p. 1083; Nov. 13th, 1897, p. 1289; Dec. 4th, 1897, p. 1456; and still more recently in THE LANCET, April 2nd, 1898, p. 966. M. Lancereaux concludes that in Paris the principal cause of cirrhosis of the liver is wine, and that in general use is red wine. Since, as he affirms, those addicted to the use of spirits are rarely affected with cirrhosis, alcohol, he holds, cannot be assigned as the cause of this disease in wine-drinkers. He considers that the potassium salts are in fault, and apparently in experiments in which potassium salts (it is not stated which) were administered to animals they died and showed on examination a cirrhosis "*bi-veineuse*." M. Lancereaux maintains in conclusion that wine—and especially plastered wine—is the cause of atrophic cirrhosis, and that it would therefore be well to prohibit the plastering and sulphating of wine. M. Vallin adversely criticised these views before the Academy and he thought it was necessary to have confirmation of the views held by M. Lancereaux. He pointed out that beer and gin, although they cause cirrhosis, only contain a small amount of potash salt. He held that cirrhosis was due to excessive alcoholic drinking altogether without reference to the salts of potash.

M. Laborde at a subsequent meeting of the Academy maintained, in opposition to M. Lancereaux, that the cirrhosis of the intemperate is caused by alcohol and not by potassium sulphate in wines. He further made the very important observation that, as is well known, the potassium salts are rapidly eliminated, and he added that they are not injurious except in very large doses. By administering as much as three ounces of potassium sulphate in fifteen days to dogs M. Laborde found that the dogs' health continued perfectly good. Lastly, he added, it must be borne in mind that everybody takes in his daily food from 75 to 105 grains of potassium salts and at this rate cirrhosis ought to be universal. M. Richet, at a still more recent meeting of the Academy of Medicine, expressed the view that there is no reason to think that the toxic qualities of wine are due to the potassium sulphate and referred the occurrence of cirrhosis to the effect of alcohol on the liver and gastric centres. He concludes, however, that M. Lancereaux is probably correct in considering that potassium sulphate is to blame in the production of the cirrhosis of drunkards.

In commenting upon M. Lancereaux's views the *British Medical Journal*, in a leading article in its issue of Oct. 30th, 1897, p. 1284, says: "The distinguished French pathologist (M. Lancereaux) is doubtless more or less correct in his conclusions about wine and hepatic diseases in Paris and it would appear that 'some' kinds of beer contain the noxious

salt."[3] "Unfortunately," our contemporary continues, "we once more face negative evidence." "He implies that spirits, especially absinthe, do not contain the salts. Absinthe-drinkers do not get cirrhosis. What, however, causes the disease in the British drunken operatives? Do some spirits, like 'some beers,' contain potassium sulphate? The matter is worth investigation. Till it is made clear we doubt if British physicians will abandon the theory that spirits—at least, British spirits—cause cirrhosis through the direct injurious action of alcohol on the liver." Referring to this article Dr. Thorowgood[4] expresses the belief that lime salts "are the constituents of wine that do more than the potassium sulphate to induce fibroid and cirrhotic change in organs." On the other hand, Dr. Luff[5] writes: "Although I am open to conviction as to the possibility of potassium sulphate contained in wines being a factor in the production of cirrhosis in excessive wine-drinkers—a point which, in my opinion, is not by any means established by the investigations of Lancereaux—yet I feel fairly confident that the lime salts contained in wine cannot be held responsible for the production of cirrhosis as is suggested."

In considering these expressions of opinion it is interesting to record that the men engaged in the bodegas in Jerez drink sometimes as much as six litres of light sherry per diem (10½ pints) and yet cirrhosis is unknown among them. This quantity amounts to a maximum daily consumption of 20 grammes or 308 grains of potassium sulphate. There is also to be considered the interesting and important fact that potassium sulphate occurs universally in almost all articles of diet and, as is pertinently pointed out by M. Laborde, cirrhosis, if it be due to potassium salts, should be universal. In the British Pharmacopœia potassium sulphate is contained in pulvis ipecac., pil. colocynth. et hyoscyami, pil. colocynth. co., and pil. ipecac. cum scilla. It is distinctly diuretic and "a valuable saline purgative" administered in doses varying from 10 to 60 grains. The average quantity in a bottle of sherry of one-sixth of a gallon is 40 grains. After all, the potassium sulphate in sherry is an equivalent of the potassium tartrate originally present in the wine, which latter salt presents similar therapeutic properties to the sulphate. Potassium sulphate is further described as mildly cathartic, usually operating without irritation, and as a useful purgative in jaundice and dyspeptic affections. Lastly, potassium sulphate "is a hepatic and intestinal stimulant of considerable power, but its action on the liver is uncertain."

Various Types of Sherry.

As has already been indicated there are a great many varieties of sherry and in what particulars each and all differ will be seen from the following analyses of a few selected types. It should be added that the samples to which reference is here made and all other samples the analyses of which are given in this inquiry were obtained personally on the spot by our Special Commissioner. The analyses were made in THE LANCET Laboratory and are perfectly independent of those published elsewhere or at any previous time.

Sherry No. 1.

	Per cent.
Solid matters	1·44
Sugar	0·18
Potassium bitartrate	0·08
Tartaric acid	0·26
Acetic acid	0·10
Mineral matter	0·46
Potassium sulphate	0·39
Alcohol by weight	13·15
,, ,, volume	16·24
Proof spirit	28·46
Alcohol in volatile ethers	0·0228
,, ,, fixed ethers	0·0320
Total alcohol in ethers	0·0548

This wine was a pale delicate dry wine of the "fino" type and of light alcoholic character and suitable for drinking with meals. It is almost as light to drink as claret. The sugary contents are practically *nil*, the wine being correctly described, therefore, as "brut." It is an "amontillado" and possesses the fragrant and delicate character of the celebrated Montilla wine.

Sherry No. 2.

	Per cent.
Solid matters	2·20
Sugar	0·215
Potassium bitartrate	0·08
Tartaric acid	0·343
Acetic acid	0·126
Mineral matter	0·55
Potassium sulphate	0·52
Alcohol by weight	14·82
,, ,, volume	18·25
Proof spirit	31·99
Alcohol in volatile ethers	0·026
,, ,, fixed ethers	0·038
Total alcohol in ethers	0·064

Like the last this is an "amontillado" with a slightly-increased proportion of solid matters and sugar. It is a light, delicately-flavoured wine suitable for drinking with meals much in the same way as claret.

Sherry No. 3.

	Per cent.
Solid matters	2·66
Sugar	0·60
Potassium bitartrate	0·17
Tartaric acid	0·382
Acetic acid	0·12
Mineral matter	0·57
Potassium sulphate	0·47
Alcohol by weight	13·92
,, ,, volume	17·17
Alcohol in volatile ethers	0·0333
,, ,, fixed ethers	0·0423
Total alcohol in ethers	0·0756

This wine comes midway in character between a "fino" and an "oloroso," though perhaps inclining to the side of the latter. It is an excellent after-dinner wine with greater "vinosity" than the previous specimen, and accordingly the ethers occur in higher proportion.

Sherry No. 4.

	Per cent.
Solid matters	2·87
Sugar	0·65
Potassium bitartrate	0·13
Tartaric acid	0·41
Acetic acid	0·10
Mineral matter	0·70
Potassium sulphate	0·65
Alcohol by weight	15·67
,, ,, volume	19·28
Proof spirit	33·79
Alcohol in volatile ethers	0·0341
,, ,, fixed ethers	0·0418
Total alcohol in ethers	0·0759

A similar wine to the last, with slightly increased body and alcoholic strength. An after-dinner wine.

Sherry No. 5.

	Per cent.
Solid matters	6·75
Sugar	3·85
Potassium bitartrate	0·16
Tartaric acid	0·336
Acetic acid	0·087
Mineral matter	0·595
Potassium sulphate	0·47
Alcohol by weight	16·46
,, ,, volume	20·24
Proof spirit	35·47
Alcohol in volatile ethers	undetermined
,, ,, fixed ethers	,,
Total alcohol in ethers	,,

This is an excellent type of a medium "oloroso" wine, full-bodied, sweet and darker coloured than the previous specimens. It is known as "palo cortado." The ethers

[3] All kinds, we believe, since water containing the highest possible proportion of sulphate of lime used in the treatment of wines is particularly selected for the production of beer, and the interaction of sulphate of lime with the potassium salts of malt would result in the formation of potassium sulphate in the beer and the sedimentation of insoluble lime salts which, as in the case of sherry, serve in falling to clarify and to refine.

[4] Brit. Med. Jour., vol. ii., 1897, p. 1375.

[5] Ibid., p. 1680.

unfortunately were not determined as the experiment failed on account of the apparatus breaking.

Sherry No. 6.

	Per cent.
Solid matters	5·45
Sugar	1·03
Potassium bitartrate	0·26
Tartaric acid	0·52
Acetic acid	0·20
Mineral matter	0·86
Potassium sulphate	0·76
Alcohol by weight	18·85
,, ,, volume	23·10
Proof spirit	40·48
Alcohol in volatile ethers	0·0745
,, ,, fixed ethers	0·1410
Total alcohol in ethers	0·2155

An old nut-brown sherry and an "oloroso." Dry to the taste but full of pleasant character (the so-called "vinosity") and accordingly containing a remarkably high proportion of wine ethers. It possesses the peculiar inimitable flavour and bouquet of fine old matured sherry. Vintage 1865.

Is Sherry a Pure Wine?

There is no point in any single particular in the foregoing analyses which may fairly be regarded as evidence of adulteration. Nor does an inspection of the entire methods concerned in the production of sherry from the vineyards to the bodega give any suspicion of anything being carried on that is not honest and publicly open to view. As will have been gathered from the present article, there is no mystery about the production of sherry and the interested visitor may easily obtain an entry into any of the great producing bodegas, and at vintage time Jerez is one of the most interesting sights in the south of Spain. Our Commissioner visited most of the large bodegas in Jerez, San Lucar, and Montilla, where sherry-growing is carried out on a gigantic scale. He was met with the greatest courtesy by the sherry-growers—and three-fourths of the industry is carried on by English people—and every step in the interesting processes was shown to him, as were all other operations incidental to the production of sherry. Perhaps the most satisfactory and reassuring feature in this connexion is that nothing is concealed, the processes throughout from beginning to end are readily explained and where possible practically demonstrated. This, of course, cannot be said in regard to the production of many wines, nor is it fair to expect altogether that such should be the case. Still, where there are no secrets concerned in the course of production it is clear that the grower is convinced and confident of the honesty of his product. There are two facts in connexion with the production of sherry which are open to be construed as adulteration. The first is the addition of sulphate of lime to the crushed grapes before fermentation and the second the addition of a small proportion of spirit to wine intended for export. Against the former we do not think that a rational objection can be raised so long as the treatment is kept within limits, and this is invariably so. It may be called an artificial recourse, but so also is the adding of sugar-candy to champagne to make it sparkling or of gelatine, clay, and so on for the purpose of refining wines, beers, &c. We have described how the same thing may be to some extent naturally effected by the simple occurrence of an unusual proportion of vineyard dust adhering to the grapes prior to pressing. We venture to suggest that this has been the origin of the so-called "plastering process." The sulphate of lime employed is a natural constituent of the soil contiguous to the vineyards. The question is, Can this be regarded in the light of adulteration or fraud, since it does not add in any way to the bulk of the wine nor does it make it poisonous? On the contrary, it refines the wine and increases its power to develop those fragrant ethers which give to the wine its peculiarly pleasant characters in regard to bouquet, flavour, and agreeable stimulating qualities. Whatever character a sherry may possess this is due entirely to the produce of the grape and to no foreign addition. When, for example, a sweet wine is demanded by the public taste a certain proportion of "dulce" is added; dulce itself being a concentrated grape liquor, while a similar liquor imparts colouring consequent upon the caramelisation produced during the concentration by boiling of the grape sugar. It has been said that wine treated with sulphate of lime contains free sulphuric acid. This, in our experience, is not true, since in the whole of the wines examined the potassium acid tartrate was not entirely removed and the ash obtained on evaporation and incineration of the solid matter was invariably alkaline. This could not be in the presence of free sulphuric acid or acid sulphates. Further, we found that tartaric acid is without action on sulphate of lime. As we have said, the potassium acid tartrate produced in wine by this treatment is largely removed in favour of potassium sulphate. There is very little therapeutic difference between the two salts, both are diuretic and purgative and are rapidly eliminated from the system. The former, however, is more likely to produce increased alkalinity of the blood than the latter. As is well known, in very old wines the acid tartrate of potassium is nearly absent, being thrown out in the form of crust.

Then, with regard to the addition of spirit. This in the majority of cases is small, and in some cases, as in Sample No. 1 in the Report, is omitted altogether, this being a "brut" natural wine, as otherwise much of the sherry could not be imported into this country at the cheap rate of duty (1*s.* per gallon of a maximum alcoholic strength of 30° proof spirit; when much under this strength sherry will not travel satisfactorily). Some estimate of the spirit so added will be found by comparing the quantity of alcohol in "mosto" and in a light imported wine as recorded in the analyses in a previous part of the present article. It will be seen that this addition amounts to about 2 per cent. by weight, although some account must be taken of the normal increase which takes place in alcoholic strength by keeping. It is a curious fact that sherry in keeping develops a slight increase of alcohol as the time advances. All spirit added to sherry, however, is obtained from wine itself, corn spirit in Spain being quite a superfluity, since wine spirit can be produced so cheaply and in unlimited quantity. Moreover, the importation of German spirit into Spain is made practically impossible by a prohibitive duty. Good brandy—that is, a genuine wine-distilled spirit—is being produced in Spain in commercial quantities which it is to be hoped will successfully compete with the stuff erroneously called brandy, not to say Cognac, but of which not a drop has been derived from the grape.

It follows as the outcome of our inquiry that it cannot be correctly said that sherry in any particular contains a single ingredient foreign to its composition. We again lay stress on the fact that in coming to these conclusions we are speaking of vinum Xericum, the vino de Jerez, or the wine produced in Spain generally known as sherry, and not of those fictitious wines which are produced, or rather concocted, only too freely elsewhere. Indeed, it is true to assert that Spain could not profitably produce fictitious wines, so essentially and peculiarly is it a country where the grape grows luxuriantly and abundantly.

PLYMOUTH PUBLIC DISPENSARY.—The 100th annual meeting of the Plymouth Public Dispensary was held on Oct. 19th. The report stated that 3345 patients had been treated during the past year and that 579 patients had been visited at their homes. The financial statement showed that in the charitable department the receipts were £903 and the expenditure £987. In the provident department the income and disbursements both amounted to £129. It was decided that the centenary of the institution should be celebrated next month.

LITERARY INTELLIGENCE.—Mrs. Alec. Tweedie has in the press a Life of her father, the late Dr. George Harley. The book is to be published by the Scientific Press, Limited.—Messrs. Williams and Norgate's circular announcing new books includes the following: "Der Luftdruck in den pneumatischen Kammern und auf Höhen: Vom ärztlichen Standpunkt" (G. v. Liebig). "Kritik der Echtheit der Paracelsischen Schriften" (K. Sudhoff). "Vergleichende Anatomie der Wirbelthiere mit Berücksichtigung der Wirbellosen" (C. Gegenbauer). "Handbuch der Cystoskopie" (L. Casper). "Anleitung zur qualitativen und quantitativen Analyse des Harns," tenth edition (Neubauer and Vogel). "Bacterium septatum und dessen Beziehungen zur Gruppe der Diphtheriebacterien" (T. Gelpke). "Handbuch der Unfallerkrankungen" (C. Thiem).

THE LANCET.

LONDON: SATURDAY, OCTOBER 29, 1898.

WE are all hoping that a better state of things is coming between friendly societies and their medical officers. The right of combination on the part of the working classes and the claim for any advantages which the principle affords in the way of organised schemes for procuring medical attendance have never been disputed by the medical profession. On the contrary, they have been recognised as they have scarcely been recognised by any other profession. This of itself constitutes a claim on the part of medical men for consideration and justice, not to say generosity, on the part of the friendly societies. Great objection has been taken to those huge combinations which are apt to become tyrannical in their dictation of terms and which, in fact, have come in many cases to be machines for sweating individual medical men and dealing a serious blow at the independence and dignity of the profession. Still the profession has preserved moderation of temper and of argument, and in regard to its supreme duty it has appealed for guidance to the General Medical Council, which is the last court of appeal in questions deeply affecting the methods or the ethics of medical practice. The Council has not yet responded to the last appeal of those who have felt the injustice of some of these huge combinations. But it is to be gathered from its last *interim* report that the Council is not without hope of being able to do something in the way of restoring that harmony which used to exist between ordinary and reasonable combinations for medical attendance and the medical profession. It is understood, too, that on the side of the friendly societies there is a genuine disposition to do justice to their medical officers and to remove all reasonable causes of complaint and friction. It is obvious that in dealing with large societies having a membership to be counted almost by millions there must be patience on both sides. Time is necessary to form and to ascertain opinion. We are quite ready to make all such admissions. Meantime it is well to take notice of individual cases which illustrate the evils of which medical men complain. A fair study of them will enable both the General Medical Council and the friendly societies to understand the strength of the complaint that in the development of friendly societies the profession has not been treated generously, whether judged with reference to the increased cost and completeness of medical education or the increased demands of friendly societies for efficient attendance and the increased means of their members to pay more adequately for it.

A case in point is reported from Evesham, in which Mr. ANTHONY HERBERT MARTIN and Mr. JOHN SAMUEL SLATER, Surgeons to the Court Vale of Evesham (No. 4648) of the Ancient Order of Foresters, were the plaintiffs in a county court action and the trustees of the Court Vale were the defendants. The action was to recover a certain sum due to the plaintiffs. The defendants admitted the sum but claimed to set off against it a sum of £4 11*s.* 6*d.*, an amount which they had had to pay on behalf of members for medical attendance in consequence of the surgeons' neglecting to attend them. The neglect, on the theory of the defendants, was in this wise. The plaintiffs had acted as medical officers of the court for twenty-five years for the sum of 5*s.* per annum for each member. On May 24th Mr. MARTIN received notice of a meeting of the society—the usual quarterly meeting—at which the reduction of his fees per member from 5*s.* to 4*s.* would be proposed. He attended the meeting and stated that if such a resolution were passed he would then and there resign. The resolution was passed and he resigned for himself and his partner, declining to see the members except as private patients. The defendants considered themselves entitled to a month's notice. As this had not been given they construed non-attendance into neglect and acting on a rule of the society against neglect (Rule 16), they deducted from the amount due to the plaintiffs the sum of £4 11*s.* 6*d.* which had been paid to other surgeons for attendance on cases between June 8th and July 8th. This was the only amount in dispute between the plaintiffs and the defendants and gave rise to the action and the counter-action. The whole question turned on the right of the medical officers to resign without notice. The terms of the contract expressly enabled the society to dismiss its medical officers without any notice whatever. Nothing was said about the notice of resignation to be given by the medical officers. The judge took the very natural view that what was fair for the society was fair for the medical officers. "In the absence of any custom in the case ..... I come to the conclusion," he said, "that the contract is a contract terminable at pleasure by either side. ..... It provides for no notice being given to the doctor ..... and he may be summarily dismissed. I conclude that the doctor has a similar right of determining his office. I therefore give judgment for the plaintiff." He further allowed counsel's consultation fee. Mr. Smith, on behalf of the defendants, reserved the right to appeal.

The *Evesham Journal* of Oct. 22nd, to which we are indebted for a good report of this interesting action, gives also an equally interesting report of the Foresters' annual dinner. The incidents of this action and the moral of it were referred to by various speakers, mostly, we think, in sympathy with the medical officers. We regret to learn that the society is not too rich. The members have to economise or to increase their subscriptions. It is of course much more easy for them to reduce their medical officers' fees than to increase their own subscriptions. But the members were ill advised in regarding the reduction of the fees of the surgeons who had served them for a quarter of a century as economy. This miserable attempt to reduce medical fees already too small is a fruitful source of the discord which obtains so largely between medical men and these societies. One speaker, Mr. GEOFFREY, said, "If they get a good day's work from a man let them give him a good day's pay. Let them treat a man as they would be treated themselves." We commend this admirable advice to this society and to all the friendly societies. Of all economies that is the worst which would starve and

sweat medical men. In this particular instance the result is melancholy. They have dismissed gentlemen of long service and of high standing in the community. It is true they have got another medical officer—a stranger, we gather—to take the reduced fee. We pass no judgment on him. No doubt he has a "conscientious belief" that he is doing what is right. But we have a deep conviction that neither he nor they are "helping along the interests of Forestry."

AN anonymous correspondent, "M.D.," in a letter to the *Times* of Oct. 24th, gives some interesting particulars respecting the results of his examination of 100 boys who were just entering a public school. They were, with scarcely an exception, supposed to be healthy boys and were between thirteen and fifteen years of age. It is certainly very startling to find that over 60 per cent. of these boys were suffering from deformities ranging from lateral curvature of the spine and pigeon-breast to flat-foot, even though we recognise that they were at the age when infantile maladies and unnatural school postures begin to tell their story. No stronger plea for proper physical exercise from the time of leaving the nursery has ever been quoted, even if we allow that the examiner was a little over-severe in his examination. Cases of serious disease were only 2, but both of these were affections of the heart. Two boys were ruptured, but it is not stated in the columns of our non-medical contemporary whether these were congenital cases. We assume them to have been and to have gone unnoticed before the medical examination. Slight varicocele was found in 14 cases. Defective vision was detected in the large proportion of one-fifth of the 100, and one boy was colour-blind. Defective hearing was found in 9. The most unexpected item in the list, however, is the number of cases—22—in which albumin was present in the urine. The subsequent history of these 22 boys, as well as a medical account of their antecedents in regard to the infectious diseases, would be most interesting and would throw a flood of light on the pathology of the so-called "functional" albuminuria of which we know so little. We hope the writer will use the unique opportunity which presented itself to him to fill up this hiatus in medical literature.

Apparently the "average" boy in height, weight, and chest girth is a very rare specimen, and this we should expect, although it sounds paradoxical to say that the average boy is the rare boy. But between thirteen and fifteen years of age a boy is on the eve of accession to puberty, at which age the rate of development is very variable and averages are rather of statistical than personal value. There is a marked difference even in standard tables of averages at these ages, and as the writer states that he has included every variation in the height and weight it would be necessary in estimating the value of his table that we should be informed which standard he has taken as his basis. Under the heading of "height" 52 boys are stated by "M.D." to be above the average height and 39 to be below it in his 100 cases. At fourteen years of age QUETELET gives 57·3 in. as the average, the Anthropometric Committee 59·3 in., and MACLAREN 60·7 in. There is obviously so wide a discrepancy between these calculations that "M.D.'s" statistics must be read with a critical judgment. QUETELET'S cases were Belgians; the Anthropometric Committee took their average from the general population of Great Britain; whilst MACLAREN, like "M.D.," drew his average from 100 boys. We should like to know the limits employed by "M.D." in deciding on the maximum and minimum measurements of the long, lanky, and narrow-chested boy and the stumpy, heavy-looking, and broad one. The variation in weight in British boys is much less than in height, as at fourteen years of age there is only a difference on the average of 1 lb. between the estimates of the Anthropometric Committee (92 lb.) and MACLAREN (93 lb.); and the same tables show but little difference in chest girth, being respectively 28½ in. and 29½ in. In "M.D.'s" cases 40 per cent. were above the average in weight and 53 below it, whilst the chest measurement showed 24 above and 68 below. These figures are more suggestive than the mere question of height. The tables of the Anthropometric Committee are by far the most comprehensive and should be adopted as the standard in any further investigations on the condition and development of any members of the community. Researches on these lines are of the greatest utility, not only to the boy and his teachers, but also to his parents and the medical officer of the school, and might with advantage be extended to all classes of people who work practically under similar conditions.

As announced in our issue of Oct. 15th the Charity Organisation Society are giving a series of lectures upon the question of medical relief, and we congratulate them upon their efforts to promote a more healthy public opinion in regard to gratuitous medical work of all kinds. The first lecture, by Mr. LOCH on the growth of medical charities, was introduced by a speech from Sir WILLIAM BROADBENT which enhances the obligation of the public and the profession to him for the long and painstaking interest which he has displayed in this subject. He might well plead both want of leisure and of inclination to criticise and improve a system under which he has attained to high success. There is a strong, and in some degree a natural, feeling of this kind among hospital physicians and surgeons which greatly hinders the reforms which are needed. They do not seem to see that a better administration of hospital relief would do the hospitals good, and would save them from that suspicion which attaches to all undiscriminating forms of relief—all relief, that is, which is superfluous, which is not needed, and which does for people what they can easily do for themselves. We commend Sir WILLIAM BROADBENT'S views to his colleagues on the staffs of the metropolitan hospitals. He seeks to raise the reputation of hospitals by bringing them into coördination with all other forms of medical service, and especially with all provident forms of such service, so that every self-respecting working man and his family should have ready use of them when occasion requires. But he would not allow them to be used indiscriminately as at present. Like many other friends of the hospital system

he sees that its weak spot is the out-patient department, where abuses undoubtedly exist. And like many other sound observers of these abuses he is doubtful of the efficacy of the ordinary remedies for them which are in vogue at present. He is of opinion that the precautions against abuse are inadequate. A superficial inquiry into the means and circumstances of patients at the hospital is not enough. Any efficient investigation must be made at the homes of the patients. This is, of course, obvious. It is the opinion even of those who benevolently supply tea and coffee to out-patients that abuses exist, but detection of such abuses in the crowd of an out-patient room is practically impossible. The difficulty is that any efficient home investigation of the case of the thousands who attend the out-patient department would be very costly. Might not an object lesson in this work be given by some volunteers undertaking an inquiry into a limited number of out-patient cases in each hospital?

This is Sir WILLIAM BROADBENT'S suggestion and it is a valuable one. He is favourable also to the creation of a Central Hospital Board for the better discussion of questions which affect the support and efficiency of hospitals. But the board which he advocates is one not of outsiders but of representatives of hospitals of every kind and creed. His arguments formed a good preface to the address of Mr. LOCH, who estimated that after making all due allowances the number of persons relieved by London hospitals was not less than 2,000,000 a year. The fact is an appalling one and should make the most conservative supporter cry for a halt. Mr. LOCH made a powerful point in his argument against such wholesale and reckless help of the growth of other forces in the community which make it incongruous and indefensible. Chief among these was the development of the friendly societies. He reckoned that one in every three working men above the age of sixteen in London was a member of some such society. This is very creditable to the working classes and makes it only the more regrettable that the hospital system should lend itself to "loose and lumbering methods" of giving medical help. Mr. LOCH said, and with some truth, that the popular view of the hospital system at present was that it should be placed within the reach of all the poorer classes on demand and that practically any member of the artisan or labouring class or his family should receive free medical aid. Such a view is founded on a misconception of the very object of hospitals and is unworthy of the men who have built up the friendly societies of England. We agree with Sir WILLIAM BROADBENT that in urgent circumstances such men should have free admission to our hospitals, but we are equally clear that for all ordinary medical attendance they are capable of making their own private arrangements.

We have noticed Mr. LOCH'S address rather from the public than the professional point of view. The evils he describes so ably should be rectified on public grounds. It is in the public interest that all degrading and pauperising elements should be eliminated from medical charity. But we do not forget that the medical profession has the greatest right to demand the remedy of such evils. It works the medical charities, it does an amount of charitable medical work which no other profession does, and its "ready help is always nigh" for the necessitous and impecunious sick. But for this very reason it should be guarded from imposition and the great institutions which use its gratuitous services should see that they lend themselves to no abuse.

THOSE of our readers who have followed the accounts given in the daily press of the cases of plague having their origin at the Pathological Laboratory in the Allgemeines Krankenhaus of Vienna cannot but fe nat the event is one of those accidents from which great good or great evil may arise according as the lessons are taken to heart. The facts are as follows. For eighteen months past the members of the Austrian Commission who went out to India for the purpose of studying plague in its clinical and bacteriological aspects have been continuing their investigations and have performed numerous experiments with the object of deriving further light as to the exact relationship between the disease and the bacillus pestis, also having in view the possibility of devising some prophylactic or antitoxic method of treatment which might be available for the prevention and treatment of this excessively fatal disease. It appears that up to the last week or two some fairly successful results have been obtained as regards the second part of the investigation, and this had even gone so far that it had been suggested that the laboratory attendant who was engaged in looking after the inoculated animals should submit himself to preventive inoculation. To this, however, he demurred and the step was not taken. The question involved in the first part of the investigation has now unfortunately been answered only too precisely in the affirmative, and we are compelled to accept as the result of a most unfortunate accident the proof that the bacillus of plague, and this bacillus alone, is capable of initiating an outbreak of bubonic plague of the most virulent type.

In this instance we have the plague bacillus taken from plague patients, transported from India, and grown generation after generation in a laboratory where the utmost care must necessarily have been exercised to keep this micro-organism uncontaminated or unmixed with others grown in the same laboratory. These organisms, a number of cultures of which, we are told, showed various grades of virulence, were used to inoculate animals. Under ordinary circumstances and with reasonable precautions (such precautions as have been taken in the same laboratories for years) there was not the slightest danger of the spread of the infection through the animals; for it having been recognised that rats are often the vehicle by which the bacillus is carried, any animal-house or laboratory to which rats from the outside had access would naturally be condemned at once, and there is every reason to believe that Dr. MÜLLER and those associated with him were fully cognisant of this danger. It was a risk scarcely to be apprehended that an attendant thoroughly impressed with the necessity for taking certain simple and elementary precautions and fully understanding the danger attending such neglect should, while on duty, have brought himself into such condition that he was no longer able to estimate his danger. This, however, is what happened. An attendant who, perhaps unknown to those in authority, had gradually been deadening his sense of responsibility went to his work

in a condition in which he did not realise the danger to which he exposed himself through not carrying out simple precautions, though in his normal condition he would never have thought of neglecting them: and we have as a result the first case of plague infection occurring directly through the mouth. As Professor PALTAUF points out, the infection might have been absorbed from the hands or from the pipe the man was smoking being laid down on a surface to which plague germs had access.

The second act in the tragedy appears to have been due to hypersensibility rather than to any blunting of a feeling of responsibility, and we have in the case of Dr. MÜLLER and of the two nurses who attended on BARISCH an instance of devotion to duty overcoming all sense of danger and of the necessity for taking personal precautions. The extreme anxiety on the part of the actors in this terrible drama to carry out all the necessary precautions to prevent the further spread of the disease amongst those outside led to their own undoing, and there can be little doubt that had Dr. MÜLLER and the nurses taken more food, more rest, and more sleep they might all have been alive to-day, as even the pneumonic form of plague does not, as a rule, infect people in a good state of health, especially when they are placed under proper hygienic conditions and not actually engaged in plague work. So far this outbreak has claimed two victims and another may succumb, but it appears probable that with this exception there will be no further cases of death from plague in Vienna. It is perhaps too early to speak with any degree of assurance on this point, but from the statements of those who are best acquainted with the circumstances of the case we are led to hope that no further ill results will directly attend this tragic mishap.

The great lesson to be gathered is that where the organisms which cause this deadly disease are being experimented with, and, in fact, wherever they are present, whether accidentally or not, the use of no precaution, either great or trifling, is to be neglected for the purpose of confining the organisms to the sphere allotted to them. That this can be done when very elementary precautions are taken we have ample evidence, especially where experimental work only is concerned, but it must be pointed out that the principles which ought to govern the work of every laboratory must be applied with equal strictness in everyday life on the outbreak of a specific infective disease. Who but a fool would think of "handling" a cultivation of anthrax bacillus or of inhaling the diphtheria bacillus or the bacillus of tuberculosis as found in a laboratory? Nevertheless, under ordinary conditions of life there are men who are frequently handling carcasses in which anthrax bacilli are present in enormous numbers and who after a time become so careless that they continue to do their work with cut hands or scratched arms, with, of course, but one inevitable result. There are people who, owing to carelessness on their own part or on that of others are exposed to infection through the throat and lungs by the organisms which give rise to tuberculosis or diphtheria. Such stories as the tragic one from Vienna should make such people think. As most of the papers point out, and as our own information goes to show, Dr. MÜLLER behaved throughout with a heroism which fortunately is not rare in the medical profession, and it cannot but be felt, after reading the full accounts of what he did and what he suffered, mentally and physically, that his conduct gives a very direct lie to an insinuation which we have often been ashamed to read. He at any rate cannot be put down as amongst those who are brutalised by the carrying on of experimental work. A last word. Some will say that the responsibility of introducing into Western Europe a disease which has not for some time invaded it in any other way is greater than that involved in watching the ravages committed by epidemic disease amongst us without making special efforts to cut short such diseases. This is a point, as Sir ROGER DE COVERLEY says, on which much might be said on both sides, but we have no doubt ourselves on which side right lies. We hope that whilst the teaching of this serious accident is taken thoroughly to heart by those engaged in carrying on experimental investigations attention will be drawn to the still wider question of the prevention of disease due to well-recognised micro-organisms, and that the interest which attaches to the deaths in Vienna may not distract attention from the need which there is for remembering that micro-organismal diseases which are at all times with us and in our very midst may for the most part be prevented by the adoption of fairly well-known and reasonable precautions.

Annotations.

"Ne quid nimis."

THE SICKNESS AMONG THE TROOPS FROM THE SOUDAN.

As we have repeatedly said, it was to be confidently expected, in accordance with our previous experience in connexion with campaigns in tropical and sub-tropical climates and with that of similar expeditions conducted by every other nation, that a considerable amount of sickness, and notably of enteric fever, would appear among the troops returning from the Soudan. Compared with similar expeditions undertaken by other Powers, or even with those previously undertaken by this country in Egypt, the total amount of sickness and the number of cases of enteric fever on the present occasion have so far been less than might have been anticipated. It will be remembered that there was a large amount of enteric fever among the British troops after the Egyptian campaign of 1882 and also after the second expedition to Suakin. It is, unfortunately, always the case that an army in the field suffers far more from sickness than from the assaults of the enemy to which it is opposed. The late expedition to the Soudan was a long and very arduous one, added to which there was other continued exposure of the troops to climatic heat and the unhealthy conditions to which they were unavoidably subjected. Although losses from sickness are practically unavoidable under such circumstances, still it must not be forgotten that their amount is very sensibly lessened in proportion to the forethought and care bestowed on perfecting the hygienic and medical arrangements in the field. The French campaigns in Tonquin, Madagascar, and elsewhere, and still more recently the very lamentable experience of the Americans in Cuba, contrast very unfavourably with those of this country in Ashanti, Egypt, and the

Soudan. We have gone on improving of late years in respect of the sanitary and medical preparation, organisation, and management of our military expeditions. We have, at any rate, reached a standard that enabled the Sirdar in his Omdurman despatches to declare his belief that "the minimum of pain and maximum of comfort procurable on active service in that country had been attained. Still, do what we may, the use of unwholesome and contaminated water on the part of the troops cannot be altogether prevented, the effect of climatic heat upon men unaccustomed to it has to be encountered, and the soldiers have for some time to subsist on tinned and preserved foods and to face the hardships and fatigue incidental to campaigning. The time for the disease-toll to be exacted comes when the physical wear and tear and the excitement and strain of the nervous system have abated or passed away, and the Grenadier Guards as well as various other corps returned from the Soudan are now paying it as a result of their gallant service there. There are, we believe, about 100 men of the 1st Battalion of the Grenadier Guards in hospital at Rochester-row, of whom between 30 and 40 are suffering from enteric fever, in addition to about 40 cases of sickness of different kinds distributed between Cairo, Gibraltar, and Netley. At Cairo there is a large number of sick in hospital belonging to the recently returned force from Omdurman and the Soudan, and at Alexandria there are also several cases in hospital. We much regret to notice that two young officers, both of whom were present with their regiments at the battle of Omdurman, have since died from enteric fever at the Ras-el-tin Hospital, Alexandria. Second Lieutenant I. V. L. Maunsell, of the Lancashire Fusiliers, who was a very fine promising young officer, is a son of Surgeon-General T. Maunsell, C.B., the Principal Medical Officer at Malta, to whom we venture to express our sympathetic condolence.

CONSCIENTIOUS OBJECTION BY WHOLESALE.

No better illustration of the difficulty often experienced in drafting a clause of a Bill in Parliament so that it shall not hopelessly fail in carrying out the objects of its promoters can be found than is offered by the so-called "conscience clause" of the Vaccination Act. The avowed object—both of Sir Walter Foster, who originally proposed the clause, and of Mr. Balfour, who adopted it—was to prevent a mere mechanical presentation of objections in a multiplied and stereotyped form, such as an organisation like that of the Anti-Vaccination League could easily promote if the opportunity were given to it for doing so. To this end it was agreed that the person having the custody of the child—that is, the father, where there is one—should be required to personally present the objection before two magistrates in petty sessions, whom he was to satisfy (in what way the Act does not provide) that his objection was conscientious. The Keighley magistrates have lately shown how it is possible to comply with the letter of the Act and to evade its spirit. Keighley, as, no doubt, most of our readers are aware, is the town which first established a record in obtaining the recognition of local option in the matter of the non-enforcement of vaccination. It is now more than twenty years since the Keighley Board of Guardians of that day refused to carry out the Vaccination Acts and were committed to prison for their contumacy by the Court of Queen's Bench for one month. That episode was the first and last effort the Local Government Board made to enforce the coercive powers which the Board possesses in this matter and since that time vaccination has been a dead letter in Keighley. It became, therefore, interesting to see how Keighley would deal with the conscience clause. Would the numerous objectors in it refuse to avail themselves of it, as some of the stalwarts of the League have been recommending them to do, or would they present themselves before the magistrates and afford them the satisfaction as to their objection which the law requires? Then, again, the further question suggested itself as to what explanations would be necessary to satisfy the Keighley magistrates. These problems have been recently solved by the holding of what may be called a great field day for reviewing the Keighley army of objectors. On Oct. 4th no less than 693 recalcitrants, mostly women, we are told, presented themselves at the Keighley Court-house to four of the magistrates, who resolved themselves into two courts for the purpose of facilitating the business. In order to further meet the exigencies of the situation the magistrates, who appear to have been of an exceptionally accommodating disposition, decided that it was not necessary that the father should appear. As a matter of form each mother was asked whether her husband was a consenting party, and in many cases this system of abbreviated procedure was carried to its ultimate extent by his acquiescence being signified by a nod on the mother's part. The magistrates also decided that no oath should be required, thereby saving the payment of a shilling, and that it would satisfy them if the applicants when asked as to their conscientious objection merely replied in the affirmative, which, we presume, they were again allowed to do by a nod. We are not surprised, therefore, to learn from a local newspaper that the whole 693 applicants, by being taken in batches and by being expeditiously marshalled before the court by the superintendent of police, were polished off in a few hours. Thus, to make use of the phrase of the local reporter, the Keighley magistrates have certainly succeeded in reducing this formality "to its lowest and simplest terms." Indeed, the reduction is so complete that the formality may be said to have almost entirely disappeared in the process. The mothers, most of whom, we are told, carried babies, appear to have availed themselves of the period of waiting to have a congenial gossip, probably thinking that the children have escaped the risks of a bad arm at a not very burdensome cost, and the whole *mise en scène* was so successful that the drama is to be repeated in a fortnight's time. It will be interesting to see whether Leicester and other places where infant vaccination has been as much of a dead letter as it has been at Keighley will follow suit on the same lines, and whether the magistrates in these localities will be equally accommodating in facilitating the evasion of the intentions of the legislature. There appears to be as much difference of opinion in the anti-vaccinationist camp as there is amongst the magistrates as to how they should treat the Act. Probably the *genius loci* in each case will work out its own form of procedure on both sides and we shall thus have abundant opportunity of observing the operation of the first stage in the "tremendous experiment" upon which, in the words of Lord Lister, we have now embarked.

THE VENTILATION OF UNDERGROUND ELECTRIC RAILWAYS.

OUR remarks upon this subject in our issue of Oct. 15th have attracted considerable attention, and several lay papers have been prompted to apply for information to just those officials who should be able to give an assurance that a system of ventilation on the underground electric railways, over and above that established when the trains are in working order, had been provided. In the particular instance to which we referred—namely, that of the City and Waterloo line—we cannot allow that such an assurance has been forthcoming. It will be remembered that the point which we raised was based on a recent occurrence on this line which seemed to show that no extra precautions had been taken

for securing the adequate ventilation of the tunnels in the event of emergency. "The best answer I can give to THE LANCET is to ask them"—so the general manager of this line is reported to have said in an interview with a representative of *London*—"how they think our workmen manage to live when repairing the line. ..... In the ordinary business of good and careful management our men make a minute inspection of the line at regular intervals and remain in the tunnel until the necessary repairs are completed. If there was any truth in this scare our men would have been as dead as door-nails long enough ago. Of course the story is altogether absurd." Clearly this is quite beside the question at issue. We never doubted that so long as the trains were running the condition of the air in the tunnels would be satisfactory. But in the event of the stoppage of the train in the tunnel this automatic system of ventilation would cease also and 200 or 300 passengers might soon exhaust the vital air. We held, therefore, and still hold, that a system of ventilation should be established providing against such a possibility. We do not gather that this is so from the information given by this responsible official. Neither is there comfort to be derived from the remarks offered by Sir Benjamin Baker to a representative of the *Standard*, for these remarks applied only to the Central London Railway, which differs in very important details from the City and Waterloo line. Sir Benjamin Baker is reported to have said that in the case of the Central London Railway there are at each station vertical shafts of from 20 to 30 ft. in diameter with electrical lifts moving up and down every two minutes. These act, and are designed so to act, like enormous pumps sucking up and restoring the air in the tunnels. This is very assuring in regard to the Central London Railway, but there are no intermediate stations on the City and Waterloo line, nor are there any electrical lifts "moving up and down every two minutes acting like enormous pumps sucking up and restoring the air in the tunnels." We have no wish to create any scare in this matter, but these statements do not in our opinion weaken in the slightest degree the force of our remarks. It would be much more satisfactory if the City and Waterloo Railway authorities could inform the public whether in the plans of their line duly approved by the Board of Trade there were adequate means provided for the ventilation of the tunnels in the event of the delay of a train by a breakdown. If there were not, and it be shown that there are at present no means of supplying air in the tunnels in such a case, then it is a regrettable and serious omission which demands prompt consideration and instant repair.

"THE FLOGGING MOVEMENT."

WE gladly call attention to a communication which appeared in the *Saturday Review* of Oct. 15th under the above heading. Amid the silly sentimentality and nauseous sympathy occasionally expressed in regard to cowardly ruffians who kick and beat their wives and children, commit deeds of violence, or cruelly maltreat policemen in their resistance against arrest, it is refreshing to light upon a bit of manly common-sense. Hardly a day escapes in which we do not come upon some description of such brutalities in the morning papers, and the experience of the out-patient departments of our hospitals could furnish numerous instances of a similar kind which never get into the papers. Everybody with any real knowledge of this class of criminals knows that there is nothing these bullies fear so much as the physical suffering which they do not hesitate to inflict on others. Despite of all that may be said to the contrary, flogging has a deterrent effect on ruffians of this class. They care nothing for imprisonment, which often has the result, moreover, of only adding further injury to that which their unhappy victims have already suffered at their hands. Besides, why should already over-taxed people have to bear the cost of "the keep" of these criminals while in jail? The poor but law-abiding citizen has no sympathy whatever with the unwholesome sentimentality of those faddists of the present day who gush over criminals of this sort but seem to ignore altogether the suffering which such criminals inflict on others weaker than themselves. Those who write and speak against flogging in cases of this kind have no practical knowledge of this class of criminals to lend any pertinence or weight to their opinion. We should like to see a year's trial made of a new and different method of dealing with them, and it would surprise us very much if a physical impression on the skins of such culprits did not result in making them and the class to which they belong think twice before committing crimes of this sort.

THE NEW POTTERY RULES.

IT is pleasing to record that the revised special rules recently issued by the Home Office in regard to certain dangerous trades have been met in a thoroughly conciliatory spirit by those most directly concerned. The new proposals have been fully discussed at a meeting at Stoke-on-Trent, where the Home Secretary, the manufacturer, and the industry were adequately represented. The proceedings, in fact, amounted to an arbitration where the *pros* and *cons* were discussed and where the experience of the practical man was consulted as to how far the suggested rules could be applied without interfering with the ordinary working requirements of the industry. The proceedings were presided over by an umpire, and there were several well-known authorities on the subject present. These included the inspectors of factories and certifying surgeons and, in fact, all who could realise the difficulties which the application of special rules might present. It is impossible to go into the revisions which were suggested and which in some cases were adopted in order to make new rules workable, but the following points are worthy of record. It appears that the total number of notices sent out by the Secretary of State as to the making of these special rules was 691, of which 416 related to the districts known as the potteries district, some ten miles long by three or four miles broad. There were 529 immediate acceptances of the special rules *in toto*, which in these cases were now enforced and being acted upon. Of the 162 original objections 78 had been withdrawn, leaving 84 to be dealt with by the arbitrators. The objections were in all cases reasonable and referred chiefly to what was considered an unfair distribution of imposition—to those cases, in short, in which much onus was thrown entirely on the manufacturer which ought to be shared by the operative. Thus there was no doubt that whatever a manufacturer did he was not helped by the personal cleanliness or care of the workers. In regard to the rule providing for the monthly examination of all women and young children by the certifying surgeon it was submitted that the rule should be modified by adding that the cost of such examination should not fall on the employer. This suggestion must remain in abeyance since there was no power to insert such a clause without further legislation. In regard to the rule providing that certain processes should not be carried on without the use of exhaust fans for the effectual removal of dust the manufacturers propose the insertion of the words "or other efficient means" after the word "fan," which should apply to all processes, the means to be approved in each particular case by the Secretary of State and under such conditions as he may from time to time prescribe for the effectual removal of dust. This after much discussion was agreed to. A modification providing for washing conveniences was also agreed to. Mr. Dugdale, Q.C., the Recorder of Birmingham, in his concluding

remarks as umpire tendered his best thanks for the way in which every suggestion made had been met by the gentlemen on both sides. On this account there had been the saving of a great deal of expense and friction, which were very undesirable elements in matters of that kind, and he certainly thought that the costs of the arbitration and the award should be borne under these circumstances by the Treasury. To this we will add that it is indeed most gratifying that a conference of this kind, beset with so many interests and points at stake, should have been brought to such a satisfactory issue and that the various important matters were discussed in a spirit thoroughly in accordance with the weal of both employer and employed.

"TYPHOID SPINE."

DR. W. S. NEWCOME has published an interesting case of "typhoid spine"—an affection the nature of which is disputed—in the *International Medical Magazine of Philadelphia*, September, 1898. Some have doubted the existence of such a condition, claiming that some complication, such as lumbago, is present in the convalescent stage of typhoid fever; others believe that it is due to some inflammation around the spinal column—"perispondylitis"; others that it is due to neuritis; others that it is hysterical. Dr. Osler states that "even if the great majority of these cases are hysterical some may be due to alterative changes of the disease." Inflammations of bone occur much more frequently after typhoid than any other fever. This lends some support to the second theory; but neuritis might also be produced by this spinal inflammation, and many cases of distinct neuritis have been reported. There have been no necropsies to throw light on the subject. Dr. Newcome's patient was a girl, aged seventeen years, who had an ordinary attack of typhoid fever. Towards the end of the fever she complained of pain in the back and thought it was due to cold which had been applied to reduce the temperature. It entirely disappeared and she was able to walk about. About two weeks afterwards she was seized with a severe pain in the lower part of the back radiating towards the hips. She could not lie down, and when standing was bent forward and drawn to the right side. The least motion was painful. She improved slowly and in a month was able to move about with little pain. Bicycle riding was ordered to "straighten her spine." Relapses occurred. Salicylates, acetanilid, salol, belladonna, bromide, and trianol were tried without success; finally morphia had to be given to relieve the pain. There was great tenderness over the second and third lumbar vertebræ and she was still bent forward and to the right. Extension weights of about 8 lb. were attached to each foot with a view to decrease the strain on the spine. In about four weeks all tenderness had disappeared. She made a complete recovery.

THE LONDON WATER-SUPPLY.

AT the meeting of the London County Council on Tuesday last a report was presented by the Water Committee. It was decided, however, to defer the discussion and consideration of the important proposals contained therein until Tuesday next, Nov. 1st. The preliminary question to be decided turns on a matter of procedure—namely, as to whether the Council will continue to wait for the report of the Royal Commission before taking any action in the direction of legislation or whether it will at once formulate its proposals and lay them before Parliament in the coming session. We believe that the report urges the necessity of pressing forward the old policy of the Council to acquire the eight metropolitan water companies, and in this connexion stress is laid upon the fact of the breakdown of the East London supply this summer. The report contains proposals as to immediate remedies and as to future supply. In regard to the former provisions are laid down authorising the Council to proceed forthwith with the connecting and laying of mains and other works necessary in order to enable it to protect any part of the metropolis from want of water. In regard to the latter it is recommended that "a Bill be promoted in the coming session of Parliament for the purpose of empowering the Council to bring an additional supply of water to London from the watersheds of the Wye and Towy on the general lines of the water committee approved by the Council April 21st, 1896, in so far as it applies to the Wye section of the engineer's scheme."

THE HYGIENE OF THE THEATRE.

WE learn that the authorities at Drury Lane Theatre, acting on the advice of Mr. Edwin O. Sachs, are setting the example of improving the hygiene of the mysterious regions of the theatre behind the curtain by introducing constructional ironwork to replace woodwork as much as possible and wire cables to replace the ropes. This should materially affect the accumulation of dust on the stage. The propelling power which Mr. Sachs has introduced is to be electricity and a great deal of manual labour will henceforward be avoided and thus the overcrowding of the stage should be less. To-day a pantomime requires some 100 to 150 stage hands alone, quite irrespectively of property men, and improved forms of stage construction are already being employed on the Continent, hydraulic power being in general use. The dampness occasioned by the constant leakage of water has, however, in Mr. Sachs's opinion, counterbalanced some of the benefits of improved construction, but he hopes that the substitution of electricity will obviate this defect. The hygiene of the stage is somewhat neglected, and the amount of illness among the employés, especially in the provinces, is particularly heavy. We are all concerned in improvements which make the theatre warm and wholesome and airy for the audience, but we are apt to forget that the producers of our entertainment have arduous work to do, often in a very unsatisfactory environment. We are glad to congratulate the management of Drury Lane Theatre on taking steps to render life behind the curtain a little less arduous and dangerous.

SIR WILLIAM BROADBENT ON THE PREVENTION OF TUBERCULOSIS.

THE admirable address of Sir William Broadbent on the Prevention of Tuberculosis delivered at Huddersfield upon the occasion of the opening of the magnificent new hospital for infectious diseases in that town will very possibly appear—as he himself allowed—to medical men to tell them nothing new. Although addressed to a lay audience in the main it is printed in our columns in full by our own special request, for it contains so much sound sense and so many points which although perfectly well known to every medical man are not sufficiently insisted on, that we consider that it will be of value to those members of the profession who did not hear it delivered to have a chance of reading it. For who are or ought to be the advisers and teachers of the public on this important question? Surely the family practitioners. It is their duty to point out the ways in which the scourge of "consumption" can be abated and as an additional incentive to do good they can refer their patients to Sir William Broadbent's weighty and yet perfectly simple words. In insisting upon the value of air Sir William Broadbent emphasised the necessity of open windows. Now, this may be possible in Huddersfield, but it is impossible to sleep and quite impossible to do any work in many parts of London with an open window, on account of the abominable and perfectly unnecessary noises.

The prevention of these is a work which the National Society for the Prevention of Tuberculosis might well take up. Apart from this, though, a good deal is being done. Enthusiastic landowners like Lord Vernon are alive to the necessity of reforming milk-supplies, and municipal bodies like those of Liverpool, Manchester, and London, are doing their best to overcome ignorance and prejudice in the matter of meat- and milk-supply. Huddersfield, we think, may be congratulated both upon its new hospital and upon the various gatherings connected with the opening thereof.

WOKING COTTAGE HOSPITAL.

THE local papers contain an account of a lengthy inquiry before Mr. G. F. Roumieu, coroner for West Surrey, as to the circumstances under which a man, who was removed to the Woking Cottage Hospital, came by his death on the railway after some dispute in the bar of the refreshment-room at the station. This account contains a statement which, so far as we remember, stands unique in the history of our cottage hospitals. It is stated that the coroner, having called before him the nurses from that institution, declined to allow them their expenses, expressed to them the very unsatisfactory nature of their evidence, and had to warn them, not only against similar behaviour in the future, but also against obstructing his officer when he went to them for the purpose of gathering evidence. We sincerely trust that the committee managing this cottage hospital will make a full inquiry into the matter and that both the inquiry and any decision which may be arrived at as the result of it will be as public as the condemnation of the coroner has been. It would be a serious thing if the public were led to believe that a staff maintained by their charitable gifts for the benefit of their fellow creatures could, under any circumstances, lend themselves, as is here implied, to defeat the administration of justice. The matter may admit of a complete explanation; if so, such explanation will doubtless be forthcoming.

THE ORDER OF ST. JOHN OF JERUSALEM.

AT the Camera Club, Charing-cross-road, on Oct. 20th, the Rev. W. K. R. Bedford, M.A., delivered a most entertaining address entitled, "The Knights Hospitallers: What They Did and What They are now Doing." Mr. Bedford, who is one of the chaplains to the Order of St. John of Jerusalem in England, has made a special study of the deeds of that religious and military Order in Malta and elsewhere, and on the present occasion occupied himself mainly with its history and development from its origin in Jerusalem as a charitable association between the years 1014 and 1023, through its subsequent successive settlements in Acre, Rhodes, and Malta, to its gradual decay and extinction in the beginning of the present century. These Knights Hospitallers or Knights of St. John succeeded to a considerable part of the possessions of the Knights Templars on the dissolution of the latter Order in 1312. After the plundering of the church of St. John in Malta by Napoleon in 1798, the Grand Master, Hompisch, took the precious relic, the hand of St. John, to St. Petersburg and created the Emperor Paul of Russia grand master of the Order. In the middle ages the Order was represented in England by the Priory of Clerkenwell, which existed almost contemporaneously with the First Crusade. During Wat Tyler's insurrection in 1376 much damage was done to the Priory as well as to the estates of the prior, who had a residence near Hampstead and a deer-park in the locality now known as St. John's Wood. The Priory was suppressed by Henry VIII. and entirely destroyed by the Protector Somerset in the reign of Edward VI. In 1834 steps were taken to establish an English branch of the Order, and in 1878 its great ambulance system was founded by two of the members—John Furley and Colonel Francis Duncan, R.E., St. John's Gate, Clerkenwell, being purchased for the Order about the same time by Sir Edmund Lechmere. The Queen granted a charter in 1888 and the insignia of the Order are worn at Court. Its operations include the ambulance work, the granting of medals to persons who save life at the risk of their own, and the maintenance of the Ophthalmic Hospital at Jerusalem, which has treated something like 50,000 patients. Mr. Bedford's remarks were illustrated by fifty photographic views and reproductions of old prints, shown with the fine electric-light lantern belonging to the club. It was announced that on Thursday, Nov. 3rd, at 8.15 P.M., Major Beevor, Royal Army Medical Corps, would deliver an address on the Afridi Campaign, illustrated with lantern slides.

TYPHOID ORCHITIS.

IN the *Journal des Praticiens* of Sept. 3rd Dr. Breton has related a case in which this rare complication occurred. Whilst convalescing from typhoid fever a youth, aged seventeen years, was attacked by pain in the right testicle which was soon followed by suppuration. When seen two months later there was ulceration of the skin of the scrotum to the extent of a franc piece and a small fistulous opening surrounded by a violaceous zone, the whole having the appearance of a tuberculous lesion. The testicle was invaded, but the epididymis was sound; there was swelling of the lymphatic glands in the corresponding groin. An injection of tuberculin gave no reaction. The whole of the suppurating area was removed; a bacteriological examination showed the presence of a bacillus with the characters of the typhoid bacillus, but the writer was not able to distinguish it absolutely from the colon bacillus. In eight days the wound was healed.

THE GARBAGE-MONGERS.

IT will be remembered that on Oct. 6th a man named Geary, trading as Ruffin and Co., was fined £100 including costs for being in possession of 44 barrels of stinking livers intended to be used in the form of meat extract as human food. Evidence was given that Geary was only performing experiments so as to make a meat extract which should command the market. On Oct. 20th Alfred Ashley was summoned as the vendor of the said livers. Ashley gave evidence and said that he did not know much about the livers. He got them through a shipping firm, Stahlschmidt and Co., who he believed got them from Munne and Schultze, of Hamburg, who got them from Buttle Bros., of Enniscorthy, Ireland. This modern commercial version of the House that Jack Built did not, however, satisfy the magistrate, who fined Ashley £25 and 5 guineas costs or three months' hard labour. Another man named Charles Sureties, who went by the name of Dr. Sureties and had formerly been manager to Geary, but carried on the trade of an extract blender in Bermondsey, was summoned on a similar charge. He did not attend the court and was fined £40 and 5 guineas costs, or three months' hard labour. No time would be allowed for grace. We consider that the law with regard to these sort of cases is in a most unsatisfactory condition. If Geary and Co. had put 2 grains of arsenic into their neighbours' beer they could every one have been sentenced to penal servitude. But because they prepare poison under the name of "table delicacies" or "meat extract" they get off with comparatively small fines. Actions such as this should be treated as attempted murder and in a case involving the possession, with intent to use or supply as food, of putrid aliments the offending party should be fed upon his own goods till they were finished, if

he lasted as long. He should be made to post at his own expense a notice of his conviction in every prominent newspaper in the kingdom and also in a prominent position in his shop and place of business. A second conviction should mean imprisonment for life. Except blackmailing there is no crime so mean and blackguardly as adulteration of food or selling putrid food. It should be put down with the heaviest possible hand.

PESTIS BUBONICA: PRECAUTIONS OF THE ITALIAN GOVERNMENT.

OUR Rome correspondent writes under date Oct. 25th: "The deaths, actual and threatened, from 'pestis bubonica' in the Viennese bacteriological laboratories, have caused the Italian Government to take all needful precautions against the introduction of the malady into the kingdom. The strictest hygienic surveillance is already established along the frontiers which divide the two countries; and this, working in harmony with the energetic measures enforced by the Austrian Government to isolate the 'pestis,' can hardly fail to confine the outbreak to its 'point of origin.' The 'Direzione della Sanità,' chiefly through the consular agencies of Italy, is in daily touch with the Viennese authorities; not only so, but within the Italian kingdom itself precautions of a like tenour with those at Vienna are being vigorously carried out. At Florence (as readers of THE LANCET are aware) Professor Lustig, who with three coadjutors of that school coöperated with Dr. Müller at Bombay in a series of studies on the 'pestis,' had established in the Tuscan capital a 'gabinetto batteriologico' for the further prosecution of these researches, and till the other day was engaged in experimenting on animals with his antitoxin. On the 23rd inst. the 'Consiglio Sanitario' of Tuscany, at an urgency meeting convened *ad hoc*, adopted measures identical with those devised by the central office in Rome and received from Professor Lustig, who was present and who requested to be heard, a spontaneous assurance that in presence of the danger he had, for the time at least, suspended all laboratory work in connexion with the 'pestis.'"

MASSAGE AND MOVEMENT IN INJURIES OF JOINTS.

IN many text-books of surgery the treatment which is still advocated for a sprain or dislocation is the fixation of the injured joint, and this treatment is usually based on the propositions, firstly, that fixation relieves the pain; secondly, that the rest prevents inflammation of the joint; and, thirdly, that it favours the repair of the ligaments. The stiffness which is so prone to follow any of these joint injuries is often very long-lasting and difficult to cure. Of late years there has arisen a tendency to treat sprains and luxations by more energetic methods, and a paper which sums up well the arguments in favour of the active treatment has recently appeared in *La Clinique*. It is by Dr. Lucien Tiberghien, of Brussels, and he points out that although rest relieves the pain the total amount of the suffering which has to be endured is by no means lessened, for the stiffness which succeeds is very painful to treat, while early and gentle massage, far from being painful, is very soothing. The stiffness resulting from injury to a joint is chiefly due to the organisation of the exudations which take place; these bind together the tendons and their sheaths, cause contraction of ligaments, and may even form adhesions between the articular surfaces; but if massage has been employed and early passive movement of the joint has been allowed the exuded materials, both leucocytes and serum, are carried off by the lymphatics and only sufficient is left to repair the damage which has been done. The degree and extent of the movement to be permitted vary somewhat with the joint affected and the extent of the lesion, but in all cases the ultimate result is that the articulation is freely and painlessly moveable in a much shorter time than if it has been kept carefully at rest.

THE WEST LONDON HOSPITAL.

H.R.H. PRINCESS LOUISE, MARCHIONESS OF LORNE, has intimated that she will attend at the West London Hospital on Wednesday, Dec. 7th, at 3 P.M., for the purpose of opening two of the three wards built in 1896. These two wards will be furnished with 52 beds, all of which have been generously presented, completely equipped, by friends of the institution, the Earl of Ilchester having given ten.

SCHOOL BOARDS AND THEIR MEDICAL OFFICERS.

A MEETING of the medical men of Halifax was held at the Halifax Club on Oct. 15th to consider the duties of the proposed school board medical officer for the borough. There was a large attendance, viz., Dr. Dolan, J.P., Dr. West Symes, Dr. Priestley Leech, Dr. Lockwood, Mr. Ellis, Mr. Kennedy, Dr. Finlayson, Dr. Marshall, Dr. Drury, Dr. Mantle, Mr. Macaulay, Mr. Woodyatt, Mr. Crowther, Mr. Shaw, Dr. Robertson, Dr. Knowles, Dr. Hunt, Mr. Morton, Mr. Branson, Dr. Bromley, Mr. Cookson, Mr. Whitcombe, Mr. Topham, Dr. Hue, and Dr. Dickson. Letters of apology were read from medical men who were unable to attend. The chair was taken by Dr. Dolan, and it was unanimously resolved that a deputation, consisting of Dr. Dolan, Dr. Mantle, and Mr. Ellis, should wait upon the School Board and represent that the profession did not approve of some of the proposed duties and should insist on the recognition by the board of all certificates of exemption and certificates for pupil teachers, whilst at the same time it should be made clear that the profession did not approve of the medical officers visiting school-children or teachers under the care of private practitioners. There was a strong expression of opinion as to the inadequacy of the salary, as pointed out by THE LANCET.[1] The deputation waited on the board on Oct. 17th with satisfactory results, and assurance was given that all certificates from private practitioners would be received as before.

THE OPEN-AIR TREATMENT OF TUBERCULOSIS FOR INFIRMARY PATIENTS.

DR. NATHAN RAW, the medical superintendent of the Mill-road Infirmary, Liverpool, has made a report to the committee of that institution in which briefly but clearly he states the case for the establishment of sanatoria for the treatment of cases of tuberculosis. After pointing out the extent to which tuberculosis prevails in closely peopled and ill-ventilated districts of large towns, and the diminution in the mortality from the disease *pari passu* with improvement in dwellings and other sanitary measures, inclusive of food-supply inspection, he gives a few figures from the records of the infirmary with which he is connected which show a gratifying diminution within the past few years; for whereas in 1893 the total number of patients suffering from tuberculosis admitted to the infirmary was 349, of whom 121 died, in 1897-98 there were but 195 admissions and 88 deaths. Dr. Raw explains the principle of the open-air treatment, which can, he says, be carried out in this country, thus obviating the necessity of sending tuberculous patients to seek sunshine and air in foreign lands. He thus enumerates the requisites of a sanatorium for the purpose of carrying out this treatment: "1. The building should be well arranged with a south aspect. 2. A dry, pure, well-

[1] THE LANCET, Oct. 1st, 1898, p. 886.

drained subsoil. 3. Pure atmosphere and abundance of sunlight. 4. A large garden or grounds well protected from wind. 5. Sheltered verandahs facing the sun. 6. Proper supervision." All these conditions are, he avers, to be found in the neighbourhood of Liverpool, and he confidently recommends the West Derby Board of Guardians to consider his suggestion to establish such an institution. Since only those in the early stages of the disease would be admissible for the treatment a building large enough to contain 30 or 40 patients, with a staff of 4 nurses and supervised by a visiting physician, would, he thinks, suffice to begin with. We trust that Dr. Raw's scheme will take practical shape and that we may have the pleasure of congratulating the West Derby Board of Guardians on being the first public body to take so wise a step towards the amelioration of the lot of a class of patients who form no small proportion of every Poor-law infirmary.

THE SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.

MOST of our readers are acquainted with the duties discharged by the Society for the Prevention of Cruelty to Children. It is probable, however, that they realise only imperfectly the extension of the area over which those duties are exercised and the consequent effort and expense implied in that extension. Not even yet have all districts in this country been brought under the society's supervision, while the needs of our colonies, where nature is not all humane, are only now being discovered. The field already covered by the society is a wide one, but there is a wider one beyond it, and there is therefore a constant necessity for exertion. If we take the record for last August alone we find that it includes 2141 cases of proved cruelty. The great majority of these appear under the heading of "Neglect and starvation," though nearly 400 are instances of direct ill-treatment and assault. In other words, vice and poverty are the most fruitful sources of domestic tyranny. The method of treatment adopted by the society is commendably judicious. Though armed with the power of a punitive law a preference is given wherever possible to less heroic measures. Of the 2141 cases referred to 1675 were dismissed with a warning, but it is noteworthy that out of 258 prosecutions there were 248 convictions. These facts will suffice to prove to any who may still be doubtful as to the quality of the society's work that the judgment and activity which it exhibits are worthy of encouragement. Subscriptions to the funds of the society cannot all be large, but they can at least be regular, as is most important for the maintenance of this deserving work, and they are certain to be well applied.

THE FATE OF SUGARS SUBCUTANEOUSLY INJECTED.

AN article has been recently published in the *Archiv für Klinische Medicin* (Band 58, p. 523) by F. Voit on the Behaviour of Different Kinds of Sugar in Man after Subcutaneous Injection. By introducing them in this way into the economy the disturbing influence of digestion is abolished. Antiseptic precautions were of course taken and solutions of mono-, di-, and poly-saccharides were used and the urine was then examined both qualitatively and quantitatively for the sugar injected or for the presence of any other sugar. In the first instance 11·24, in the next 60, and in the third 100 grammes of grape sugar were injected in solutions containing 10 per cent. of the sugar. It was only in the third experiment that 2·64 grammes of the sugar were excreted by the urine, in the second experiment only traces of it, and in the first none at all. Similar large quantities of fruit sugar and of galactose were disposed of in the body, since after the injection of from 10·13 to 31·25 grammes of the former sugar only traces reappeared in the urine. Lastly, amongst the mono-saccharides the non-fermentable sugar sorbinose was tried with the result that after the subcutaneous injection of 10·15 grammes 3·7 grammes, or 36 per cent., reappeared in the urine. Of the pentoses there were examined arabinose, xylose, and rhamnose. Of the first two of these about one-half was disposed of in the body and of the rhamnose only about 14 per cent.; the remainder was eliminated unchanged. It was found that if these pentoses were ingested by the mouth a larger portion was disposed of and it is possible, Voit thinks, that it may be to some extent destroyed or altered in the stomach. Of the disaccharoses cane-sugar and milk-sugar were wholly and completely excreted as such by the kidneys; and since, when taken into the stomach, they are both used up to a greater or less extent, the conclusion is obvious that only the intestine is competent to effect their decomposition and render them serviceable. On the other hand, the third disaccharid, maltose, was completely disposed of when injected subcutaneously. Trehalose, which is isomeric with maltose, was only retained in the body to the extent of 85 per cent. These results agree well with those of E. Fischer on the action of blood-serum on the different kinds of sugars outside the body. They also show that the aldehyde nature of the different sugars does not form a measure of their destructibility, since milk sugar, in spite of its aldehyde nature, is not destroyed, whilst trehalose, which is not an aldehyde, is, and, further, that the greater or less facility of the breaking-up of a disaccharide does not coincide with corresponding behaviour in the body. Thus, cane sugar, which inverts easily, passes unchanged through the body, whilst the contrary holds for trehalose. Raffinose, which is a trisaccharide, was found in two experiments to be destroyed to about 35 per cent., whilst it is unaffected by blood-serum outside the body. The portion not destroyed reappeared in the urine as raffinose. Of the so-called polysaccharides glycogen was completely destroyed so that it did not reappear in the urine either as glycogen or as sugar. Achroödextrin, erythrodextrin, and amylodextrin (soluble starch) were used up in the body to the extent of about 75 per cent. of the quantity subcutaneously injected. Voit is of opinion that just as in Fischer's experiments outside the body in order to effect thorough fermentation of sugar, its antecedent splitting up into mono-saccharides is necessary, so the animal economy is not able to burn off the higher sugars until they have been broken up into their components.

MUNIFICENT GIFT TO WINSFORD.

CHESHIRE is to be congratulated on possessing a family with the benevolent traits of the Verdins, for it owes to the munificent spirit of this house many of its public buildings. Among the many gifts with which the name of Verdin is associated not one will be more useful or more appreciated than the new infirmary at Winsford, which was opened on Oct. 20th by the Duchess of Westminster. By the permission of the Queen the new infirmary, which was formerly the mansion of the Verdin family, is named after Prince Albert. It is a stone-fronted building standing on a site close to the station of the London and North-Western Railway Company. On the ground floor are reception, nurses', and convalescent rooms, and two men's wards with eight beds, whilst on the first floor are women's and children's wards which contain four beds. The building has been handsomely furnished by the donor, Mr. W. H. Verdin, D.L., J.P. Before presenting to Mr. Verdin the silver shield, which was meant as a recognition by the town of Middlewich of the gift of the infirmary, the Duke of Westminster said that "it would probably be within the recollection of many present

that he had already had the privilege of assisting in no less than three ceremonials, and his wife had taken part in another, which made four, in not much more than three years, to commemorate very noble work done in a very noble way by one or other of the Verdin family, who had done so much for that district and the adjoining district of Northwich. All their generous works would be a lasting benefit to their neighbours. Not only had they provided for the treatment of the mind of the inhabitants, but also for the cure and relief of suffering, whether from accident or disease." Mr. Verdin having replied, the Duchess of Westminster presented a portrait in oils of Mr. W. H. Verdin to his son, Lieutenant R. N. H. Verdin, Cheshire Yeomanry Cavalry, a gift from the inhabitants of Winsford to commemorate the attainment of Lieutenant Verdin's majority.

ABDOMINAL ADHESIONS AS A CAUSE OF PAIN.

IT was Mr. Mayo Robson, we believe, who first pointed out that many instances of severe abdominal pain spoken of as neuroses were due to adhesions and capable of cure by operation. These adhesions may affect the stomach, vermiform appendix, ovaries, Fallopian tubes, and omentum. One of the sequels of gastric ulcer is perigastritis, which may result in adhesions to the abdominal wall or other organs, forming sometimes a tumour which can be felt externally. In the *Boston Medical and Surgical Journal* of Sept. 29th Dr. J. C. Warren has published a case in which such adhesions were the cause of much suffering which was removed by operation. A man, aged forty-one years, who had suffered for years from dyspepsia and severe paroxysmal attacks of pain in the epigastrium, was admitted to hospital. He was sallow and emaciated. There was a tumour in the right hypochondrium, hard and ill-defined, and seemingly attached to the abdominal walls. An incision 5 in. long was made parallel to the right costal cartilages at a distance of about an inch. On dividing the abdominal parietes the liver was found attached to them by a thick exudation of lymph. The gall-bladder and the pylorus were buried in adhesions. After these had been broken down palpation failed to detect anything abnormal in the stomach or duodenum. The stomach was incised near the pylorus and explored. No ulcer or induration was felt in the stomach, but a cicatricial band narrowed the pylorus, so that only the forefinger could be pushed through; the opening was gradually stretched so as to admit the ring finger also. Complete recovery followed.

HYGIENE AND HEALTH IN HOT COUNTRIES.

DR. FEDERIES MONTALDO, who holds a commission in the medical department of the Spanish navy, has brought out a practical medical and hygienic guide for Europeans in hot climates, and according to a reviewer in the *Archives de Médecine Navale* for September it is a work which is entitled to very high commendation. In the first part the writer gives the intending traveller suitable advice as to his preparations prior to embarkation, entering into details regarding the composition of his baggage. Next, assuming that his European has made good his landing in some country within the tropics, he sketches out an ideal twenty-four hours as a model for his information and guidance, incidentally drawing his attention to his constant foes—to wit, heat, the sun, variations of temperature, moisture of the atmosphere, and what are somewhat vaguely called telluric miasmata. The important subject of diet is then dealt with, what to eat, drink, and avoid, the best time for meals, how to purify drinking water, the judicious use of alcoholic liquors, &c., the section ending with a chapter on the hygiene of clothing, inclusive of headgear, footgear, outside garments, underlinen, and bedding. The personal portion of his theme exhausted, Dr. Montaldo proceeds with a brief disquisition on organic diseases and their treatment, confining himself, it is said, to plainly worded description and practical advice. He approves of quinine for combating malaria and lays down rules for its employment, but he also vaunts the good qualities of calaya in similar cases, his experience on the west coast of Africa enabling him to recommend that drug with confidence. A summary of the symptoms and treatment of bites and stings follows, together with instructions for dealing with the common surgical affections, such as contusions, wounds, burns, fractures, and dislocations, the section concluding with hints as to the management of yellow fever, cholera, beri-beri, and other diseases usually met with inside tropical zones. Finally, the writer advises the European to seek his native clime without delay when he finds himself seriously weakened by anæmia or climatic cachexia, but at the same time he strongly recommends the establishment of sanatoria locally on the model of the institutions of this description which are to be found in English and French colonies. Dr. Montaldo, in the opinion of his friendly reviewer, writes with a facile pen and withal lucidly, avoiding technical terms so far as possible in order to make himself intelligible to non-professional readers. The Madrid Academy of Medicine has warmly commended his book, but it seems a pity it was not published a few years ago before the Cuban troubles began, for during that lamentable contest innumerable lives must have been lost for lack of sanitary knowledge.

SURGERY THEN AND NOW.

THE opening address at the Meath Hospital, Dublin, inaugurating the session of 1898-99, was delivered by Mr. Hepenstal Ormsby, surgeon to the hospital. After premising that it was almost impossible to get anything new about which to talk he said that he had made up his mind to take for his subject "A Century's Progress in Surgery." He reminded his hearers how in everything force had given place to gentleness. Especially was this marked in the treatment of dislocations. Patients were no longer bled wholesale, neither were they poisoned with mercury. But, great as these advances were, the two which shone out above all others were the introduction of anæsthetics and of antiseptics. Orthopædic surgery had made wonderful strides and so had the surgery of the brain. Mr. Ormsby referred to the multiplication of special hospitals and said that there was a danger lest practitioners should rather be led to make a diagnosis by the aid of various special methods of investigation without taking into consideration all the circumstances of the cases, as was the way, the necessary way, with the surgeons of a past generation who had to rely mainly on their unaided senses. He also alluded to the Vaccination Act and the improved status of the medical practitioner in the army. Perhaps in some of the advances to which he referred the pendulum has swung too much the other way, notably, as Mr. Ormsby remarked, in the practically total abolition of bleeding. This is a therapeutic measure which, wisely employed, is of incalculable service, though possibly more in medical cases—e.g., dilated right heart, pneumonia, and pleurisy—than in surgical cases, though in these latter the use of leeches to an acutely inflamed joint gives the greatest relief. But the horrors of hospitals of fifty years ago can be but faintly imagined by the practitioner of to-day, and, on the other hand, if Liston or Cooper could arise to-day and see a modern operation involving the abdominal or thoracic cavity or the removal of a cerebral tumour, what a perfect revelation it would be to them. And the beauty of all these advances is that they are the outcome, not of one or two men's brains, but of the laborious, patient work of hundreds of toilers; in the dissecting room, in the post-mortem room, in the laboratory, the anatomist,

the pathologist, and the physiologist wrest the secrets from nature. Slowly has the great house of knowledge been built up, rotten stones have been taken out and replaced by fresh and sound ones, portions pulled down and rebuilt, till at length what we do know stands upon enduring ground. At least, so it seems for the present, but there is still plenty for the science builders of to-day and the future to make plainer and to investigate.

THE SHEFFIELD SCHOOL OF MEDICINE.

THE opening of the seventy-first session of the Sheffield School of Medicine, which is a department of the University College, was marked by an address delivered by Dr. Dyson, the Vice-President of the College. Dr. Dyson really combined with his address a report upon the progress of the school. He pointed out that the school had certain most salutary regulations, one of which was that a student was bound to present himself for an examination within six months after that examination became due. This did away with "chronics." A very fair percentage—namely, 12—of their students went for a university degree, a percentage which compared favourably with the larger and richer schools. He might mention that smaller schools had advantages over large in that their students got more individual attention. The equipment of the school had recently been greatly improved owing to the generosity of Sheffield citizens. The chair of physiology was still in need of an endowment. Passing to more purely professional matters Dr. Dyson referred to the new Vaccination Act, saying that although the Royal Colleges of Physicians and Surgeons had unanimously sent in their opinion as to the value of vaccination, yet the new Bill had been passed. As regarded the providing of a standardised lymph and increased facilities for supply it was a good Bill. He had seen two epidemics of small-pox and did not want to see another, but if one did come and the fatuous conscience clause was taken advantage of by many, after that—the deluge. After mentioning the action of the General Medical Council as to unqualified assistants and congratulating the profession upon the establishment of the Royal Army Medical Corps Dr. Dyson passed on to consider the movement in connexion with the prevention of tuberculosis. They might, he thought, try the open-air treatment, not, indeed, in Sheffield itself, but on the moors, which were quite close to the city. After the conclusion of the address the various prizes and certificates were presented. Dr. Dyson's address is particularly interesting as showing how much better off in one way the provincial medical schools are than those in London—namely, in the benefactions which they receive from citizens.

THE PATHOLOGY OF DENTAL CYSTS.

SOME valuable light is thrown on the pathology of dental cysts in an interesting communication to the October issue of the *Journal of the British Dental Association*. The author, Mr. J. G. Turner, draws his conclusions from an exhaustive microscopical examination of 17 cases which have been under his care. In all with the exception of one he was able to discover a distinct epithelial lining, and from the specimens obtained he was able to demonstrate the succession of changes which occur in the development of these cysts. The nucleus of origin for these cysts is to be found in the epithelial remnants so frequently met with in the alveolar dental ligament. These masses were first demonstrated by Malassiez under the name of para-dental epithelial remnants, and have their origin, according to that observer, in a prolongation of the enamel-forming organ of the tooth which precedes and determines the formation and shape of the dentine of the root and is known as the epithelial sheath of Hertwig. On the formation of the dentine the surrounding mesoblastic cells invade and partly destroy this sheath, applying themselves to the surface of the dentine and forming the cementum and alveolar dental ligament, the undestroyed portions of the sheath remaining as the para-dental epithelial remnants. Through the continuous absorption of small quantities of septic matter an active growth is induced in these remnants, so that either a solid epithelial mass or an epithelial reticulum enclosing islands containing cells of mesoblastic origin is formed. That the septic matter is the product of putrefactive changes in the pulp of a tooth or teeth is pretty clearly demonstrated by the fact that in 27 cysts all were connected with teeth containing septic pulps. These reticula or masses, although present in chronically thickened alveolar ligament, are more constant in the small growths attached to septic roots known as root tumours and frequently form the chief element. These epithelial root tumours are of common occurrence and when of any size determine for themselves a connective tissue capsule. By a continued growth at the periphery of these epithelial masses or reticula and a degeneration in the centre a small cyst is in time formed containing a pultaceous mass like inspissated pus. At some period the contents liquefy, and with the continued growth of the epithelium a clinically recognisable cyst is formed. These stages are all very clearly shown in the paper by means of admirable photo-micrographs. The paper also contains details of three cases of gingival cysts. Such growths possibly have their origin in those clusters of epithelium constantly met with in the muco-periosteum of the gums under the term "glands of Serres," and judging from the cases recorded the irritant which lights up activity in these masses is to be found in the septic matter absorbed from a sinus in connexion with a pulpless tooth. These cysts—namely, dental and gingival—are interesting, too, as examples of tumour production, the cause and effect being so clearly demonstrable. In the para-dental epithelial remnants and the glands of Serres we have the "rests," in the absorbed septic matter the probable chronic irritant, and in the epithelial cyst, dental or gingival, the result.

THE WATER-SUPPLY OF LEICESTER.

IT has been suggested in regard to the proposal to derive a new source of water-supply for Leicester from the upper reaches of the Derwent in Derbyshire that there would be a possibility of introducing water which would induce the disease known as goitre. As is well known, "Derbyshire neck" is constantly prevalent in certain parts of Derbyshire, and appears to be traceable to the drinking of water which is rich in salts of lime and magnesia. The actual predisposing cause of this disease is surrounded with considerable obscurity. Instances have been placed on record in which, on the contrary, soft water would appear to have produced the disease. In the Himalayas in India, for example, goitre occurs where snow water is drunk. On the other hand, the balance of evidence certainly favours the view that goitre prevails most where the water-supply is derived from limestone rocks. This is, at any rate, the character of the water supplied in many parts of Derbyshire, where the disease has been so pronounced as to have given it the name of "Derbyshire neck." The municipal authorities have therefore very properly caused an inquiry to be made on this point into the character and quality of the water which it is proposed to draw from the upper waters of the Derwent. It is important that such an inquiry should be very carefully conducted before the new supply becomes available. Dr. J. H. Davies has been instrumental in drawing attention to the subject and last week the views of Sir Edward Frankland were placed before the water committee. In his report Sir Edward Frankland points out that the districts in Derbyshire which suffer from this

disease are situated upon the coal measures, which impart to the water flowing over them or percolating through them an extreme degree of hardness caused by the solution of salts of lime and magnesia. On the other hand, the contemplated supply from the upper reaches of the Derwent, besides possessing an extremely high degree of organic purity, is remarkably soft, being almost absolutely free from salts of lime and magnesia. This water is supplied to Manchester, Macclesfield, and Buxton, and is free from reproach. It is said that goitre is at present not unknown in Leicester and Sir Edward Frankland concludes that so far from the disease being increased by the introduction of the pure and soft water of the Derwent the hope may be entertained that by the use of a water having only one-seventh of the hardness of the present supply the disease in the town may be entirely extinguished.

ISOLATION HOSPITALS.

AN important and animated discussion recently occurred at a meeting of the Lincoln Board of Guardians. Lincoln seems to be very much behind the times, inasmuch as there is no isolation hospital there for infectious cases. But cases have recently appeared in the town which demonstrate the need for such an institution. A man employed at a brick-yard at 21*s.* a week had six children, five of whom had been attacked about a week before the discussion took place with scarlet fever. They were attended by a private medical man at their home, but subsequently the relieving officer gave an order for them to be treated by the same medical man, he to act as if he was the district medical officer. The mother of the children was about to be confined, and it was represented to the clerk to the board of guardians that it would be exceedingly dangerous for her to be confined in a house where children were suffering from scarlet fever, and after a consultation between the clerk and the urban sanitary authorities the mother was removed to the fever ward of the workhouse to be confined. A long discussion then took place on the question—Whose duty was it to provide isolation for the children? The board of guardians rightly repudiated any legal responsibility, but a few of the members thought it would be an act of charity to remove the children to the workhouse; a proposal, however, to this effect was lost by a large majority. The urban sanitary authorities alleged that though they had the power to build an isolation hospital it was not their duty. We agree with the remarks of the clerk to the guardians that the onus of dealing with it does rest upon the sanitary authority of the district. The importance of an isolation hospital cannot be exaggerated. In many houses, such as the one in this case, proper isolation cannot be carried out; the inhabitants are not paupers and yet have not sufficient means to adopt the necessary precautions against the disease spreading to other houses. In the case just related it had already attacked patients in the adjoining house. If an extensive epidemic occurs in that district the urban sanitary authority will be distinctly to blame, and immediate steps should be taken to establish an isolation hospital to which similar cases might be removed.

DEATH UNDER CHLOROFORM.

WE have received, through the courtesy of Mr. Lewis Buck, resident medical officer to the Bolton Union Workhouse, very careful notes of a fatality under chloroform which occurred recently at that institution. The patient, a weaver, aged sixty-six years, suffered from epithelioma affecting the larynx. He showed some signs of senile change and had pulmonary emphysema, dilated hypertrophied heart, and diseased arteries. There was no physical evidence of fatty heart, but there was a marked history of excessive indulgence in alcohol. There was considerable narrowing of the larynx leading to dyspnœa, for which the operation was imperative. The patient was given the A.C.E. mixture, but as the ether which it contained appeared to irritate the air-passages chloroform was substituted, being given by dropping it upon a single layer of a towel placed over the patient's mouth and nose. He took the anæsthetic badly and a quarter of an hour after the commencement of the administration of the anæsthetic he died. There was apparently no failure of the heart, as evidence of circulation existed after respiration had quite ceased. Air could by artificial respiration be made to enter the lungs freely. There was no shock, as no operation was commenced. The reflexes were not abolished when dangerous symptoms appeared. The administrator was a careful and experienced man, who believed that no "overdose" in the usual acceptation of the phrase occurred. The death was sudden and very little chloroform had been given. The death appears to have been due to respiratory failure brought about by what, under ordinary circumstances, would have proved a non-poisonous dose. In cases of chronic dyspnœa, especially in alcoholic subjects, there is usually a gradual carbonisation of the blood which renders such patients peculiarly bad subjects for anæsthetics. We are not told whether cyanosis was a prominent symptom in the present case; as a rule it exists and renders the task of the anæsthetist a doubly difficult one, as he has to steer safely between the Scylla of overdosage—a very variable and often a very narrow margin existing between safety and danger—and the Charybdis of insufficient narcosis marked by obstreperous and perilous excitement. In suitable cases there is no doubt that Schleich's infiltration method offers a satisfactory alternative to general anæsthesia. In connexion with the statement that circulation appeared to persist after respiratory failure it is important to note that McKendrick and other physiologists have maintained that although the heart may appear to be beating it is in these cases not beating effectively, and circulation is not, in fact, taking place, although cardiac movements may be easily felt and seen.

THE Council of the Childhood Society, which was established for the scientific study of the mental and physical conditions of children, announces a course of lectures to be given in the library of the Sanitary Institute, 72, Margaret-street, W., on Oct. 27th and following Thursdays up to Dec. 8th inclusive, at 8 P.M. Dr. Symes Thompson will lecture on Nov. 24th, his subject being Mute Children, their Education and Health Care, and on Dec. 8th Dr. Henry Rayner will lecture upon the Early Recognition and Treatment of Mental Condition. Children, perhaps, are too often misunderstood, so that this society does a good work in trying to obviate the tendencies to such misunderstandings.

THE second trial of John Lloyd Whitmarsh upon the charge of the wilful murder of Alice Bayly, who died, according to the prosecution, as a result of an attempt to produce criminal abortion, was concluded on Wednesday night when the jury returned a verdict of guilty, qualified with "the strongest possible" recommendation to mercy. Mr. Justice Bigham pronounced sentence of death, informing the prisoner at the same time that the recommendation of the jury would be forwarded to the proper quarter and that he would support it with everything that he could say properly.

DR. SIDNEY COUPLAND has been appointed a Commissioner of Lunacy in the room of Dr. Reginald Southey, resigned. We congratulate Dr. Coupland on his appointment very heartily. He has been our colleague in the editorial duties

of THE LANCET for many years, and we are aware that the confidence thus shown in his judgment and capacity for work is thoroughly justified, while his all-round attainments as a practical and scientific physician, no less than his labours in behalf of the recent Royal Commission on Vaccination, selected him clearly for official recognition.

A MONUMENT in honour of Dr. Hans Wilhelm Meyer, whose name is known so well in connexion with adenoid growths of the pharynx, was unveiled on Wednesday last at Copenhagen. We hope to give next week an account of the proceedings. Sir Felix Semon made over the memorial to the municipality of Copenhagen on behalf of the international committee which organised the movement.

THE annual distribution of prizes at the St. George's Hospital Medical School will take place in the board room of the hospital to-day (Saturday) at 2.30 P.M. The distribution will be made by His Grace the Duke of Westminster, K.G., joint treasurer with Mr. Holmes.

MR. R. H. P. CRAWFURD, M.D. Oxon., M.R.C.P. Lond., has been appointed assistant physician to King's College Hospital.

REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR THE YEAR 1896.[1]

CONCLUDING NOTICE.[2]

IN continuation of our remarks regarding hepatic abscess we may add that, according to a table in the report under review, the mortality from abscess of the liver in 1896 was 17 times greater among European than among native soldiers, and it is stated to have been 70 times greater in the previous year. The admission ratio from dysentery, on the other hand, among European soldiers was rather less than that of native soldiers, 1 : 1·5.

So much attention has of late been given to the subject of venereal diseases among British troops serving in India that this matter need not now detain us. It may suffice to say that the secondary syphilis ratio of 1896 is about the highest on record.

Turning to the vital statistics of officers serving in India we find that the death-rate in 1896 for those of the British army was 14·18 and for the Indian army 10·76 per 1000 respectively. The number of deaths from enteric fever among both British and Indian officers was the same as in 1895. The number of fatal cases from this disease is usually greater among the British than among the Indian officers, apparently because the latter have to serve first with British regiments, and it is known that youthful and recently arrived men are more liable to be attacked than others.

Turning now to the next section of the report—that on the native army of India—we find, as might be expected, that ague was the chief cause of admission—36 per cent. of the total admissions. The chief causes of death among soldiers of the native army were pneumonia and remittent fever, the former causing 31 per cent. and the latter 10 per cent. of the total deaths. The mortality-rate in the native army in 1896, including absent deaths, was altogether 12·57 per 1000, as against 15·71 in the preceding year. The smaller sickness and mortality in 1896 is attributed by the Sanitary Commissioner to the dry and non-malarious character of the year; there were, however, more influenza and cholera in 1896. It may be briefly said that while the young soldiers of the British army die from enteric fever the chief causes of death in the native army are respiratory diseases. In 1896 over 36 per cent. of all the deaths were due to these diseases.

Scurvy seems to be unduly prevalent among the native troops, and the existing amount of that disease is alleged to be greater than that actually returned and it is believed to underlie a vast amount of sickness which does not directly bear its name. Hepatic abscess, as has been already said, is not a frequent disease of the native soldier, and this probably points to the injurious influence of a too liberal use of alcohol and animal food on the part of the European in a hot climate like that of India. Touching venereal disease it may be mentioned that there were only 37 admissions for every 1000 men among native troops, as against 512 for every 1000 men among European troops. Several reasons have been urged in explamation of this striking difference, into which it is needless, however, to enter on the present occasion.

Section IV. of the Sanitary Commissioner's report deals with the Jails of India. The year 1896 having been comparatively settled, rainless, and bright, sickness—especially sickness attributable to malaria—was, we are told, less than usual, but there was more or less food scarcity and influenza and cholera were somewhat more prevalent. The ratios of admissions into hospital and of constantly sick indicate that the year was a comparatively healthy one. The presence of famine in India (as in the Central Provinces especially) sends numbers of unfortunate natives into jails. The enfeebled state of their health makes them, of course, less resistant to disease. Overcrowding, too, existed in some of the jails. The chief causes of death were dysentery, pneumonia, tubercle of the lungs, and diarrhœa. Dysentery gave rise to 21 per cent. of the total deaths, pneumonia to 16 per cent., and pulmonary tubercle, to 11 per cent.

In respect of cholera in the jail population 1896 compares on the whole favourably with preceding years. July and August were the worst months for cholera. The high rate of mortality from bowel complaints in the native jail population as compared with that in the European and native armies is a notable feature. As regards respiratory diseases, again, taking the mortality of European troops as 1, that of the native troops is 4·8 and that of the prisoners is 6·9. This seems to indicate that while a previous medical history of malaria renders the individual very vulnerable to causes of acute pulmonary disease, and insufficient clothing is also a factor, the overcrowding and defective ventilation of buildings occupied by persons living in community have likewise a very important bearing in the production of pneumonia and affections of the respiratory organs.

Section V. deals with the Vital Statistics of the General Population and Section VI. with the History of the Chief Diseases. The subject of cholera and the modern bacteriological researches in relation to it, together with the late experiments in cholera prophylaxis and the distribution of the disease in India, are pretty freely discussed, and this portion of the report, we may add, will well repay perusal and consideration. The appearance of bubonic plague in Bombay in the latter part of 1896, the fevers of India and Assam, *Kala azar*, and other matters of medical and epidemiological interest are also dealt with. In conclusion, we may say that we consider the Report for 1896 of the Sanitary Commissioner with the Government of India an admirably compiled as well as an interesting official production.

[1] Annual Report of the Sanitary Commissioner with the Government of India, 1896, with Appendices and Returns of Sickness and Mortality among European Troops and Prisoners in India for the Year. Calcutta: Office of the Superintendent of Government Printing, India. 1898. Price, 5 rupees.

[2] The First and Second Notices appeared in THE LANCET of Sept. 24th and Oct. 8th, 1898, respectively.

HOSPITAL ABUSE AT COVENTRY.

THE question of hospital abuse at Coventry has now reached a new stage. The article by our Special Commissioner published in THE LANCET of April 17th, 1897, set out very clearly the condition of things and showed that the essential point in the whole matter was the influence and control of the working men upon the funds and management of the hospital. The workmen subscribe 1*d*. per week and the sums raised in this manner have increased from £132 in 1874 to £1300 in 1896, while voluntary subscriptions and donations are declining. This 1*d*. per week subscription though nominally voluntary is practically a compulsory tax. The result, to put it shortly, is that every workman expects that he has a right to treatment at the hospital for as long as he likes in return for his 1*d*. per week. Early in this year a sub-committee was appointed by the general committee to

inquire into the matter. This sub-committee brought up a report in May which was referred back, and finally the amended report came up on Oct. 12th. The report as printed in the *Coventry Herald* was as follows:—

The sub-committee ascertained from the representatives of the working men's committee that the answers to the questions which were previously submitted to them were given somewhat under a misapprehension and amended answers to Questions 1 and 3 have now been given. The questions with the original and amended answers are as follows:—

Question.—1. If a man who subscribes to the Hospital Saturday Fund and earning, say, £3 or £4 per week, applied for a ticket from his works, would he be granted one?

Answer.—No answer could be given.

Amended answer.—No.

Question.—3. The sub-committee suggest making inquiries as to the position of candidates (say for one month) who it is considered can well afford to pay a medical man, and ask if the members of the Hospital Saturday Committee are willing to assist them in obtaining the necessary information.

Answer.—They could not entertain the suggestion.

Amended Answer.—The matter will now be taken in hand and inquiries made as suggested in the question.

Following up the undertaking given by them, the working men's committee have held an inquiry and investigated all the out-patient cases treated at the hospital between May 21st and June 30th, and have submitted a report thereon to your sub-committee.

During the period investigated by the working man's committee the number of out-patients treated was as follows:—By ticket, 70; without ticket, 126. Special departments: by ticket, 37; without ticket, 27. From the report it would appear that 30 cases were kept back for strict inquiry which upon investigation it was thought would probably be found to be instances of hospital abuse. The cases were reported upon by various members of the committee, and only 2 cases were discovered which, in the opinion of the working men's committee, were such as should not have been treated at the hospital. The sub-committee do not consider the report of the working men's committee as regards the abuse to be conclusive, as it must be admitted that in many cases the patients were in receipt of wages sufficient to enable them to pay to a dispensary, a medical service, or a club. This view has been expressed and upheld by the honorary medical staff, who from their position are well able to judge as to the suitability of the cases which come before them for hospital treatment.

With reference to the cases treated without a ticket, the sub-committee believe that a very large proportion of those patients could have obtained a ticket if they had thought proper to have taken the trouble to do so, and having regard to this fact the sub-committee recommend: "That on and after 1st November next every patient be required to present a ticket before receiving treatment, excepting in the case of simple teeth extractions for children under twelve, accidents, and such acute medical cases as require immediate help, and as to the latter cases after first aid they should be required to obtain the necessary tickets for subsequent treatment."

The sub-committee have revised the existing ticket and recommend that the ticket as revised should be brought into use concurrently with the previous recommendation. The sub-committee believe that the strict enforcement of the ticket system will be productive of great good to the hospital by causing its benefits to be more strictly confined to deserving cases. It is hoped that the subscribers, the managers of workshops and of the philanthropic institutions, and all who have tickets at their disposal will do all in their power to carry out the instructions and regulations on the tickets.

The chairman moved the adoption of the report, which motion was eventually carried. It will be seen from the report that a revised ticket is to be issued, and those who give away the tickets are to be requested to see that they only select fit objects for charitable relief. The medical staff as a whole appear to incline to the belief that the ticket system is a wrong one. This is certainly our own opinion, for in general for one subscriber who looks after the proper distribution of his or her tickets there are fifty who do not. Even if this system were to be altogether done away with there remains the question of the right of workmen to hospital relief, however high their wages, on account of the 1*d.* per week subscription. So there appears to exist this dilemma. If the 1*d.* per week is to be, as it should be, looked upon as a mere subscription and not as entitling the giver of necessity to relief, the Saturday collections will diminish very greatly. If it is to be looked upon as entitling the givers to treatment as in a provident dispensary, then the medical staff of the hospital will have to be paid and in that case the appointment of hospital surgeon or physician should be open to every medical man in the town simply on account of his being a practising medical man in Coventry.

THE ENTRIES AT THE MEDICAL SCHOOLS.

THE following table, the figures of which have been supplied to us by the courtesy of the deans of the various schools and medical faculties, will give some idea of the number of students who have decided to enter the medical profession this year. The first column of the table is that to which particular attention should be directed as it shows the number of students who have entered for the full course of medical study. The other columns are of interest, and especially that relating to dental students, but the gross totals both for the present and past medical sessions only tend to show the relative popularity of the various schools. It should be pointed out that last year's totals at King's College and the London School of Medicine for Women show the total number of full students only. With regard to St. George's Medical School the figures do not include students who have entered for a course of tropical medicine. Under the agreement whereby joint cards of admission are issued to the clinical instruction of the following hospitals and schools of medicine—viz., Charing-cross, Guy's, King's College, Middlesex, St. George's, St. Mary's, St. Thomas's, University College, and Westminster—42 qualified men have entered since the 1st of May of this year—that is to say, 15 from the United Kingdom, 12 from the colonies, and 15 from foreign countries. These figures, which belong to the "special courses" column of the table, cannot, of course, be placed against the name of any one school. They should, however, be taken note of in making comparisons.

ENTRIES FOR THE YEAR 1898–99.

London.

Name of Medical School.	Full students.	Special courses.	Prel. sci.	Dental.	Total.	Total 1897–98.
St. Bartholomew's	100	75	13	1	189	188
Charing-cross	24	30	6	24	84	41
St. George's	50	4	0	0	54	53
Guy's	81	21	19	53	174	180
King's	28	218	12	0	258	15
London	60	47	11	0	118	115
St. Mary's	65	47	5	0	117	130
Middlesex	20	29	0	14	63	46
St. Thomas's	62	7	8	0	77	82
University	34	45	51	0	130	107
Westminster	12	31	3	1	47	19
Royal Free (School for Women)	45	2	0	0	47	37

Provincial.

Birmingham (Mason College)	23	12	11	15	61	—
Bristol (University College)	13	0	5	1	19	—
Cambridge University	127	0	0	0	127	—
Durham University	30	31	0	6	67	—
Leeds (Yorkshire College)	24	9	19	0	52	—
Liverpool (University College)	52	13	26	18	109	—
Manchester (Owens College)	66	62	71	18	217	211
Sheffield (University College)	9	0	4	0	13	—

University College of South Wales and Monmouthshire, Cardiff, sent in their figures too late to be included in the above table. Those figures are as follows: Full students, 15; special course students, 4; prelim. sci. students, 13—total 32.

NEW INFECTIOUS DISEASES SANATORIUM AT HUDDERSFIELD.

TWENTY years ago the Huddersfield Corporation began to exercise the powers they had obtained for the establishment of an infectious diseases hospital. On Jan. 1st, 1878, 15 cases were under treatment and 163 patients passed through the hospital during that year. During 1897 the number of patients under treatment reached 700. The progressive demands upon the resources of an inadequate and out-of-date building have led to the erection of a "sanatorium," which was formally opened by Sir William Broadbent, himself a native of Huddersfield, on Oct. 22nd.

The sanatorium has been built from the plans of Messrs. Edward Thomas and Sons, Queen Anne's-gate, S.W., in competition with 144 other architects. An examination of the hospital is alone necessary to confirm the encomiums of Sir William Broadbent when he said at the opening ceremony that everything connected with it met with his entire approval. The plan may be concisely described as a long

open corridor, at one end of which is the handsome administrative block of three storeys, in the Renaissance style, at the other the buildings for the laundry, the disinfecting apparatus, and mortuary. In the intervening space, on each side of the central corridor, stand the ward pavilions. The pavilions stand on pillars, are one storey high, and a branch from the main corridor enters the middle of each transversely. The ward kitchen immediately confronts the visitor with a ward of fourteen beds on each side. The pavilions run N.N.E. by S.S.W. A small rectangular block stands out from the western aspect of the end of each and contains the bathrooms and lavatories, whilst from the centre of the eastern side a ward of two beds communicating with the large ward has been projected. The cubic space to each bed in these small wards is 2155 cubic feet; in the large wards 2095 cubic feet. The pavilions are bright and cheerful, there is a window between each bed, whilst the direction of the pavilions ensures a maximum of sunshine. The floors are fireproof covered with polished teak laid diagonally; all corners and angles have been rounded; the walls are in Keene's cement painted and varnished; the windows are on the N.A.P. principle and can be cleaned from the outside; and all the pipes, electric wires, and flushing cisterns are in the false roof where they are accessible from the outside. The heating is partly by radiators and hot-water pipes and partly by open fireplaces. A ventilating stove with an ugly black flue in the centre of the ward would spoil the appearance of the ward less if its funereal colour were changed to a bright, cheerful tint. With the exception of a small fan in one of the walls of each large ward there is no attempt to change the air of the ward by mechanical means. Under each bed is an inlet for fresh air, and in the wall above the beds are the apertures leading to circular outlet shafts discharging on the eaves, whilst Boyle's ventilators are placed on the ridge and communicate with the highest point of the ceilings. The beds are Gale's iron bedsteads, fitted with Lawson Tait mattresses, upon which a mattress of white horsehair is placed. The kitchens and lavatories are fitted with every modern requisite, and an ingenious shelved cupboard, closed with an air-tight sheet-iron door but projecting into the open-air, to which its sides are open by lowered ventilators, deserves mention. It is intended for the storage of chamber utensils the contents of which it is desirable to keep for subsequent examination. The floors of the kitchen and lavatories are in Terrazo pavement, the walls in glazed bricks, so that all may be washed down with the hose-pipe. The complete scheme comprises five pavilions. Three only have been erected. These, with the isolation block of ten beds, in course of erection, provide 100 beds.

The quarters for the medical officer, matron, nurses, and servants are excellent. Bright pictures and excellent furnishings adorn the sitting-rooms and the bedroom appointments are marked by taste and comfort. The kitchens and stores are in a separate block immediately behind the administrative block, whilst between the kitchen and ward pavilions intervenes the receiving block, consisting of a verandah-protected room, opening at once into a bathroom and thence into the central corridor. On the other side of the corridor is the discharge block, similar in its arrangements to the receiving block. The site is about 12 acres in extent, and together with the 71 ft. between each pavilion is being laid out as a recreation ground for convalescent patients. Exclusive of the land the sanatorium has cost £24,667, and the total of the contracts is about £30,000. It is a modern hospital of the best type and will prove a valuable help to the corporation in checking epidemics and safeguarding the health of the town. By adding a laboratory for serum diagnosis and the bacteriological examination of diphtheritic or suspected diphtheritic membrane and the appointment of a resident medical officer capable of making use of such a laboratory the corporation would give completeness to a scheme in which nothing that could add to the welfare of the sick seems to have been overlooked.

Sir WILLIAM BROADBENT, in reply to a graceful little speech by the Mayor on presenting a gold key of the building, after tending his thanks for the honour done to him that day, referred to the fact that Huddersfield was the very first town to adopt the compulsory Notification Act. He mentioned that because notification was a subject which he had deeply at heart and for advocating which he had at one time incurred great unpopularity. He then declared the building open. In the afternoon Sir William Broadbent delivered his address in the lecture hall at the Technical College upon "The Prevention of Consumption and other Forms of Tuberculosis." This address will be found in full in another column. The audience comprised both medical men and laymen and the address was listened to with marked attention. In the evening there was a banquet at which Sir William Broadbent, in returning thanks for the toast of "The Medical Profession," remarked upon the enormous progress made in medical matters from comparative darkness into light.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6217 births and 4043 deaths were registered during the week ending Oct. 22nd. The annual rate of mortality in these towns, which had declined in the six preceding weeks from 24·6 to 19·0 per 1000, further fell last week to 18·8. In London the rate was 17·3 per 1000, while it averaged 19·8 in the thirty-two provincial towns. The lowest death-rates in these towns were 11·4 in Cardiff, 11·7 in Huddersfield, 12·5 in Blackburn, and 12·8 in Bristol; the highest rates were 24·4 in Liverpool, 25·7 in Sunderland, 26·4 in Newcastle-upon-Tyne, and 30·2 in Salford. The 4043 deaths in these towns included 538 which were referred to the principal zymotic diseases, against 774 and 618 in the two preceding weeks; of these, 250 resulted from diarrhœa, 100 from "fever" (principally enteric), 72 from diphtheria, 48 from measles, 36 from whooping-cough, and 32 from scarlet fever. The lowest death-rates from these diseases were recorded in Croydon, Cardiff, Wolverhampton, and Bradford; and the highest rates in Norwich, Salford, Hull, and Sunderland. The greatest mortality from measles occurred in Plymouth, Norwich, and Gateshead; from "fever" in Nottingham, Salford, Halifax, Leeds, Hull, and Sunderland; and from diarrhœa in West Ham, Burnley, Salford, Hull, and Sunderland. The mortality from scarlet fever and from whooping-cough showed no marked excess in any of the large towns. The 72 deaths from diphtheria included 30 in London, 6 in Swansea, 6 in Sheffield, 5 in Portsmouth, 5 in Liverpool, 4 in Leicester, and 3 in West Ham. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Oct. 22nd, was 2915, against 2459, 2606, and 2728 at the end of the three preceding weeks; 381 new cases were admitted during the week, against 300, 358, and 357 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 226 and 263 in the two preceding weeks, were again 263 last week, and were 35 below the corrected average. The causes of 43, or 1·1 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bradford, Leeds, and in fourteen other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Leicester, Liverpool, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased in the three preceding weeks from 19·1 to 20·7 per 1000, declined again to 19·0 during the week ending Oct. 22nd, but slightly exceeded the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·0 in Leith and 13·7 in Aberdeen to 22·1 in Perth and 23·8 in Greenock. The 572 deaths in these towns included 38 which were referred to diarrhœa, 19 to whooping-cough, 9 to "fever," 8 to measles, 6 to scarlet fever, and 6 to diphtheria. In all, 86 deaths resulted from these principal zymotic diseases, against 123 and 105 in the two preceding weeks. These 86 deaths were equal to an annual rate of 2·9 per 1000, which was 0·4 above the mean rate last week from the same diseases in the thirty-three large English towns. The 38 fatal cases of diarrhœa showed a further decline from those recorded in recent weeks, and included 18 in Glasgow and 9 in Dundee. The 19 deaths from whooping-cough corresponded with the number in each of the two

preceding weeks, and included 11 in Glasgow and 3 in Edinburgh. The deaths referred to different forms of "fever," which had been 14 and 12 in the two preceding weeks, further declined to 9 last week, of which 5 occurred in Glasgow and 4 in Greenock. Of the 8 fatal cases of measles 5 were recorded in Edinburgh and 3 in Glasgow. The deaths from diphtheria, which had been 7 and 8 in the two preceding weeks, declined again to 6 last week, and included 2 in Glasgow, 2 in Edinburgh, and 2 in Dundee. Of the 6 fatal cases of scarlet-fever, 3 occurred in Glasgow and 3 in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 105 and 141 in the two preceding weeks, declined to 120 last week, and were 24 below the number in the corresponding period of last year. The causes of 32, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 22·1 and 24·9 per 1000 in the two preceding weeks, further rose to 26·0 during the week ending Oct. 22nd. During the past four weeks the rate of mortality in the city has averaged 24·7 per 1000, the rate during the same period being 18·6 in London and 19·1 in Edinburgh. The 174 deaths registered in Dublin during the week under notice showed an increase of 7 upon the number in the preceding week, and included 20 which were referred to the principal zymotic diseases, against 19 and 18 in the two preceding weeks; of these, 8 resulted from diarrhœa, 7 from whooping-cough, 4 from "fever," 1 from scarlet fever, and not one either from small-pox, measles, or diphtheria. These 20 deaths were equal to an annual rate of 3·0 per 1000, the zymotic death-rate during the same period being 1·6 in London and 3·0 in Edinburgh. The deaths from diarrhœa, which had declined from 27 to 11 in the three preceding weeks, further fell to 8 last week. The 7 fatal cases of whooping-cough exceeded the number recorded in any week since May, 1897. The deaths referred to "fever," which had been 2 and 3 in the two preceding weeks, further rose to 4 last week. The 174 deaths in Dublin last week included 42 of infants under one year of age, and 34 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a decline from those recorded in the preceding week. Four inquest cases and 5 deaths from violence were registered; and 54, or nearly a third, of the deaths occurred in public institutions. The causes of 12, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: R. H. J. Browne to the *Edgar* and afterwards to the *Alacrity;* C. R. Sheward to the *Edgar* and afterwards to the *Redpole;* F. Nimmo to the *Edgar* and afterwards to the *Pigmy;* W. Jackson to the *Plover;* and M. L. B Rodd, F. J. A. Dalton, and F. D. Lumley to the *Edgar*.

ROYAL ARMY MEDICAL CORPS.

Major Thompson proceeds to Woolwich for duty. Lieutenant-Colonel Kirkpatrick and Captain Jones are transferred to the Aden District, and Captain Sladdon from Bombay to the Nagpore District. Major Lane is posted to the Bombay District.

INDIA AND THE INDIAN MEDICAL SERVICES.

Lieutenant-Colonel McConaghey, Civil Surgeon, Lucknow, is appointed to the Visiting Medical Charge of Rae Bareli, in addition to his other duties, during the absence on deputation to the Jail Department of Dr. Simpson.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Augustus Kinsey-Morgan, 1st Dorsetshire Volunteer Artillery, to be Surgeon-Major.

The following notification is substituted for that which appeared in the *London Gazette* of Oct. 11th, 1898:—Surgeon-Lieutenant E. W. St. V. Ryan to be Surgeon-Captain.

VOLUNTEER MEDICAL STAFF CORPS.

The London Companies: Surgeon-Captain C. T. D. Urquhart, from the Aberdeen Company, to be Surgeon-Captain.

MEDICAL ARRANGEMENTS AT ARMY MANŒUVRES.

In *Truth* of Oct. 20th it is stated that the medical and hospital arrangements during the recent army manœuvres were inadequate. According to the regulations for mobilisation there should have been present 71 officers and 816 non-commissioned officers and men of the Royal Army Medical Corps, whereas the actual numbers available were 30 and 282 respectively, while apparently the horses required for the ambulances belonged to the Army Service Corps and had to do double duty. Mr. Labouchere is of opinion that it is not necessary to make the same preparations for dealing with the sick and wounded at manœuvres as it would be in a campaign, and yet he immediately afterwards enunciates the thoroughly sound dictum that "if these manœuvres are to serve the purpose for which they are intended it is as necessary that the conditions of actual warfare should be applied to the medical and ambulance arrangements as to any other department." In a succeeding paragraph the subject of "typhoid fever, euphemistically described as enteric," is dealt with, some rather curious statements being advanced. With the advice regarding the after-treatment of convalescent typhoid fever patients, however, it is impossible to disagree. Beyond question "extreme care" is needed "for a long time after the [apparent] disappearance of the disease, both in regard to the diet of the patient and keeping him from violent exertion," and doubtless the note of warning sounded by *Truth* will reach the ears of many a convalescent soldier whose friends are not "likely to possess any medical knowledge."

THE LATE SIR W. A. MACKINNON, K.C.B.

A handsome tablet has been erected to the memory of the late Director-General of the Army Medical Department, Sir W. A Mackinnon, in the chapel of the Royal Victoria Hospital, Netley, with which place he was for some time connected as Assistant Professor of Military Surgery. The tablet, which was erected by numerous friends of the late Director-General, bears the following inscription: "Sacred to the Memory of Surgeon-Major-General Sir William Alexander Mackinnon, K.C.B., Q.H.S., A.M.S., born at Strath, Isle of Skye, June 27, 1830, died in London October 28, 1897. He served in the Crimea with the 42nd Royal Highlanders, and through the Indian Mutiny on the personal staff of Lord Clyde; he also took part in the New Zealand and Ashanti (1873–74) campaigns, and closed as Director-General of the Army Medical Staff an honourable and active career, which extended over forty-three years. This tablet is erected by his brother officers and several old comrades and friends."

THE WAR OFFICE.

While Mr. Brodrick is to be congratulated on his promotion to the Foreign Office as Under-Secretary of State for Foreign Affairs we may add that the War Office will regret the loss of his services, for he has proved an able, energetic, and business-like official, and has not spared himself in mastering the details of army administration. In conjunction with Lord Lansdowne he has helped to carry out some important changes in the organisation of the army and, among other things, in the reorganisation of its medical service as well as in matters affecting army sanitation generally. Sir George Whyte, V.C., has taken up the post of Quartermaster-General, having, we are glad to say, quite recovered from the effects of the injury he sustained whilst serving as Commander-in-Chief of Her Majesty's Forces in India.

THE HEALTH STATISTICS OF THE ITALIAN ARMY.

The *Army and Navy Gazette* of Oct. 22nd, deriving its information from published official returns, states that the health statistics of the Italian Army for 1896 show that 151,438 were treated in hospitals and infirmaries out of a total strength of 204,382 men. There were 1184 deaths in all, of which infective diseases caused 536 (225 typhoid fever). The mortality was greatest in the first year of service and between the ages of twenty-one and twenty-three years.

THE SICK AND WOUNDED FROM THE SOUDAN AT NETLEY.

Her Majesty the Queen will, we understand, visit Netley Hospital on her return from Scotland to see the sick and wounded from the Khartoum expedition.

Correspondence.

"Audi alteram partem."

DIFFICULTIES UNDER THE INFECTIOUS DISEASES (NOTIFICATION) ACT.

To the Editors of THE LANCET.

SIRS,—A week or so after my first attendance on a case of scarlet fever the mother told me that she had noticed a rash on a child who had been sleeping with my patient and that the rash had been followed by peeling, which was now nearly at an end. I examined the cuticle carefully and had no doubt that this had been a mild case of scarlet fever now at the end of the desquamative stage. I thought it my duty to notify it, but struck out the word "urgent" which is printed on the envelopes addressed to the medical officer of health and inserted the words "desquamative stage," thinking that this would indicate—as there was already a case under treatment—that there would be no need for fresh sanitary measures. To my surprise I received a note from the medical officer of health next day in which the following passages occur: "The inspector visited the house at once to make usual inquiries." "The father was astounded to hear that the child had scarlet fever." "The inspector thereupon examined the hands and feet without finding any trace of peeling." "In the circumstances I have thought it desirable to mention the above facts and to ask you whether there may not perchance be an error of diagnosis." In a subsequent letter he says: "I think you should withdraw the notification. I do not see how I could possibly advise the committee to pass the certificate for the payment of the fee." I have since had a letter from the vestry referring to my "neglect to notify the case forthwith" (I may have allowed twenty-four hours to elapse between seeing the case and forwarding the notification), further stating that they "will decline in the present instance to pay the usual fee for your certificate." I should like to know if it is usual for sanitary inspectors to examine cases and correct the diagnosis of medical men. Also, if the vestry are within theirrig hts in refusing to pay for a notification.

I am, Sirs, yours faithfully,

Kensington, Oct. 26th, 1898. ALFRED E. BARRETT.

*** We recommend our correspondent to read our pamphlet entitled "Difficulties under the Infectious Diseases (Notification) Act."—ED. L.

"VITALITY."

To the Editors of THE LANCET.

SIRS,—From Dr. Beale's letters it would seem he does not believe in the correlation, equivalence and transmutation of forces, and that one force may be a mode of another, as heat (and perhaps life) is a mode of motion. He seems to exclude the vital from all other forces and to regard it as *sui generis*, neither transmuted nor transmutable. Vitality, he says, "cannot be derived from non-living matter *or* from force," but may it not be derived from such matter *plus* force, as locomotive power is from coals and water *plus* heat? Professor Lindley, in his "Introduction to Botany," Ed. 1839, p. 358, says he had some raspberry plants before him as he wrote which had been raised from seeds taken from the skeleton of a man 30 ft. below the surface of the earth, who had been buried with some coins of the Emperor Hadrian. The seeds therefore were 1600 or 1700 years old. All this time they had lain without motion or change of any kind and so might have remained for ever if they had not been exposed to heat, light, air, and water. Before such exposure they might be regarded as so much *quasi* dead matter, waiting for forces to produce in it chemical activity, change, movement, germination—in a word *life*, which the matter *per se* and the forces *per se* could never have generated. As Dr. Beale denies that life can be derived from non-living matter and forces and as there was a time when our earth consisted of these only, how does he explain the first appearance of life upon it? A and B being the only things in existence, if C appears surely it must be derived from A or B or A + B?

I am, Sirs, yours faithfully,

D. HOOPER, B.A. Cantab., M.B. Lond.

Trinity-square, S.E., Oct. 24th, 1898.

To the Editors of THE LANCET.

SIRS,—My thanks are due to those members of the profession who have taken part in the consideration of that which I have long regarded not only as the most important of all the questions connected with every department of medicine and surgery but a question which has to do with the first principles of natural science and philosophy.

Seeing that the bioplasts, the several particles of living matter upon which the formation, action, and preservation of all the active tissues and organs of a living being depend, are less than the one-thousandth of an inch in length and diameter, and in many cases considerably less than this, the question of the nature of vital change—of vitality—must be considered from the microscopical point of view. I doubt whether anyone who studies the facts and observations to which I have referred will very widely differ from me as regards the conclusions he arrives it.

It is to be regretted that so far no one has criticised the views I have advanced from the microscopical side, which are based upon observations possible only during the last thirty or forty years. Even recently some naturalists, physiologists, psychologists, and pathologists, as well as chemists and physicists, have not only under-estimated the constantly increasing value of microscopical investigation in our endeavour to determine the nature of vital phenomena, but have calmly ignored the important bearing of facts ascertained by microscopical inquiry upon the problem of life. Consequently free discussion, in the absence of which the advancement of every department of natural knowledge must be retarded, has scarcely been commenced.

During the last few months, however, some encouragement has been afforded to students in microscopic investigation in England by the honours conferred upon Kölliker and Virchow, whose lives have been devoted to microscopical anatomy and pathology, while Lister stands pre-eminent in the recognition by the State of his labours in an all-important department of minute investigation.

Dr. T. Glover Lyon's suggestions take us far beyond the visible minute bioplasts consisting of living matter to be found in all those parts of a living organism where vital action proceeds. Is not the state of the "tissue" of a living animal as contrasted with the "tissue" of a dead one dependent upon the never-ceasing interstitial currents of fluid through every part of it—a circulation which is set up and maintained as long as the bioplasm lives, but ceases the instant it dies? "Ethereal forces" and "ethereal waves" also go far beyond anything I can hope to study. Tissue and bioplasm I have seen and have demonstrated to others.

Dr. Harry Campbell will force upon me notions with which I am not concerned. When he has defined what he means by "evolution" it will be soon enough to discuss with him the question of the "evolution of vitality." Surely he may "take his individual *homo* and trace in imagination his evolution from, let us say, his piscian ancestry" to his heart's content, and "travel down his long ancestral lines," and even become "more and more involved," without trying to involve me and my efforts to learn a little more about living matter and the formation and action of tissue in interminable, impossible travel. From the thoughtful interest he has shown, however, I do not despair of his becoming a convert to vitality, and I feel sure if he will only consider the changes which take place, say, in the limbs of a child, as by the process of growth the distance between the peripheral extremities and the brain gradually increases, he will no longer regard growth as it occurs in all things living as a change in any way akin to a physical process such as aggregation—man as a machine constructed or built by the Sun, or man's life to be physical and chemical, and I hope he will regard all vital evolution as absolutely different from all physical evolution, as is life of every kind and of every period from any physical change at present known. But whatever may be our differences all workers and thinkers will acknowledge with Dr. Harry Campbell the absolute truth and eternal application to all our achievements of

Hamlet's profound philosophy with which his letter concludes.

Mr. O'Regan seems to think, with some other authorities, that life is a property of matter and argues that "as matter never had a beginning life as a property of matter never had a beginning"; but does not very much matter exist without the property in question? Still though I may not add anything "to our knowledge," I trust I may escape the terrible fate of being taken "round and round the circle for ever," and I hope Mr. O'Regan will treat my vitality with a little more kindness and consideration than he extends to the assumption that matter has "a real existence."

I am, Sirs, yours faithfully,

Oct. 25th, 1898. LIONEL S. BEALE.

"WHAT IS 'FIRST AID'?"

To the Editors of THE LANCET.

SIRS,—I quite agree with Mr. Valentine Matthews that it is time that a more definite course was laid down for lecturers and examiners in "first aid." The late Surgeon-Major Shepherd's Handbook has been improved of late, but it is still very unsuitable for a text-book. What good purpose can possibly be served by teaching a class the number of bones in the spine, chest, wrist, and hand, or the total number in the body? The description of the cavities of the heart and its valves is another among the many unnecessary complications. Yet the lecturer dare not omit these details lest a short-sighted examiner fail to pass his class. I once had two large classes of working men "ploughed" almost to a man on the subject of poisons. I confess my teaching had gone little beyond the proper use of an emetic, but for the type of student I am certain it was quite enough.

What is wanted is a book prepared with the greatest care, not one put together in a hurry, as was, confessedly, the present one. In it all that is essential should be printed in large type, with perhaps a few further facts for more ambitious students in a smaller type. The matter should be arranged in logical order. A more complete book could be easily arranged in less than half the space. Examiners should be instructed to examine only on the text-book, or at all events to ground their report on a knowledge of it. A page might be devoted to a list of facts which *must* be learnt and then both lecturer and examiner would be on firm ground.

There are many other details which might be improved in the present course. Thirty is far too many for one man to instruct practically. Paper work should be abolished for all. Such knowledge is often practically useless, and the present distinction between literates and illiterates is illogical. The practical part of a lecture should be the longer. The present direction that half an hour of each lecture should be devoted to practical work is absurd, for with a class of thirty it would mean five minutes' practical work to each student during the course. I try to arrange that each pupil does all the operations at least twice, but of course that means cutting down the "unpractical" part of each lecture to little over half an hour.

I have not much faith in representative committees, and question whether Mr. Matthews's scheme for such would produce a more satisfactory course. I would rather see one able man appointed who should write a new text-book and submit it to all the lecturers and examiners. Those who felt themselves qualified to criticise might apply for, and pay for, a copy, and thus expense to that excellent association the ambulance department of the Order of St. John of Jerusalem might be avoided.

I am, Sirs, yours faithfully,

Ottery St. Mary, Oct. 24th, 1898. CLAYTON JONES.

"THE WATER TEST AS APPLIED TO SEWER CONNEXIONS."

To the Editors of THE LANCET.

SIRS,—I think this is a matter which should be publicly noticed as in the course of my experience I have found that the so-called water test as applied by some local authorities to sewer connexions is a farce and I have no doubt many engineers, architects, and builders have had the same experience. As an instance a few weeks ago a client of mine bought a house in one of the suburbs which he decided to have redrained. A deposit of £5 was paid to the local authorities for putting in a new 4-in. connexion from the sewer to the fence. The house-drains were put in under my supervision, laid on concrete beds, and the joints were properly made with cement and allowed to set for four days before the first water test was applied. The joints successfully resisted a pressure of 5 lb. to the square inch. The pipes were then surrounded with concrete and when it had properly set the trenches were filled and watered in and no ramming was allowed until 2½ ft. of soil covered the pipes. The whole of this work was examined by the local sanitary inspector, who was as particular as I was myself about the soundness of joints, &c. The connexion from the sewer to the fence was put in in a very different manner. The joints were made with cement and tested by the local authorities as soon as they were made, before even the cement was dry, and I noticed a workman ramming the clay into the trench a few inches only above the pipes which had no concrete either below or around them. The drain was filled with water which was run off immediately and this was the water test. Further comment is needless. This is a fair sample of what is constantly going on.

Without going into the legal question as to whether local authorities have any right to make a charge for sewer connexions at all, which I very much doubt, I contend that as my client paid £5 for this connexion he should be allowed the privilege of having it examined by his representative, to see that he got value for his money, which in my opinion he certainly did not. If the house-drains had been laid and tested (?) in this way, they would have been promptly condemned by the local authorities. Why, then, should not the local authorities be compelled to do their portion of the work as thoroughly as they make the house-owner do his? for at present they carry out this work in a most unsatisfactory way. If the water test is to be applied to those connexions at all, why should it not be applied properly, as in the case of the house drains? There is no doubt that the ramming process has shaken off the wet cement from the joints of the pipes. To fill a drain with water when the joints have just been made and to let the water run off immediately is *not* applying the water test. A paper bag will hold water until the paper becomes saturated, and so will a drain until the joints become saturated; but then, if the water is allowed to remain in and the cement joints are not set the pressure of water in the drain will force the cement out of the joints. It should be remembered that a great many sewer connexions are a very few feet below the road surface, and if a stoppage occurs the sewage escapes through the leaking joints and saturates the surrounding ground with results known to every sanitarian.

I think this is a subject that should prove interesting to medical officers of health as there must be many miles of this defective drainage both in London and the suburbs. If it is argued that the trenches in the public roadway cannot remain open long enough to give the pipe-joints sufficient time to set, then why should not heavy iron pipes with caulked lead joints be used for those connexions?

I am, Sirs, yours faithfully,

Wimbledon, Oct. 21st, 1898. JOHN W. MAYNE.

"PRACTICAL HINTS ON CYCLING FOR COUNTRY PRACTITIONERS."

To the Editors of THE LANCET.

SIRS,—Your cycling readers will thank Dr. Emmerson for his paper on "Practical Hints on Cycling for Country Practitioners," in THE LANCET of Oct. 22nd. The hints are valuable, not only for medical practitioners, but for all cyclists, whether ladies or gentlemen. The bicycle has made a revolution in travel and is giving health and strength to those who use it in moderation. I see that the machine is much in requisition among the young people of the theatrical profession, who wisely take advantage of it to get as much country air as possible during their provincial tours. It is wonderful the long distances ordinary riders can cover without much fatigue. A young girl of my acquaintance, ten years of age, rode to a watering-place upwards of forty miles from her home and afterwards spent the greater part of the day on the sands playing with her little friends.

But a greater feat than this was performed recently by the Rev. Henry Watney, rector of Canwick, Lincoln, who rode from Lincoln to a place six miles beyond Newbury in Hants, a distance of 165 miles, in one day, and on the following day he did not feel the least fatigued. Mr. Watney strongly

advises that food should be taken every 50 miles, if it were only milk or bread-and-milk. Many people would feel rather tired at the end of a railway journey of 165 miles. I am afraid bicycling is putting constitutional walking out of fashion—in fact, numbers of good bicyclists are bad walkers and tire very quickly.

I am, Sirs, yours faithfully,

WILLIAM O'NEILL, M.D. Aberd., M.R.C.P. Lond.

Lincoln, Oct. 24th, 1898.

MEDICAL FEES FOR LIFE INSURANCE EXAMINATIONS.

To the Editors of THE LANCET.

SIRS,—You are no doubt aware that it is the general practice of life insurance offices to pay a fee of one guinea for the medical examination of proposers for insurance, but that when the sum assured is small only half that fee is allowed, the reason being that the smallness of the premium will not admit of the payment of the full fee. It may interest you to learn that, as the result of the discussions in the section for life insurance at the recent meeting here of the British Medical Association, the directors of this office have decided to double the fee when the sum assured is £2000 and upwards, thus allowing two guineas for the medical examination in these cases.

I am, Sirs, your faithfully,

DAVID PAULIN,

Manager, the Scottish Life Assurance Company,

Edinburgh, Oct. 26th, 1898. Limited.

A CORRECTION.

To the Editors of THE LANCET.

SIRS,—The statement on page 1090 of the issue of THE LANCET for Oct. 22nd that I am a candidate for the appointment of extra-physician to the Sick Children's Hospital is incorrect.—I am, Sirs, yours faithfully,

Edinburgh, Oct. 26th, 1898. J. S. FOWLER.

POOR-LAW MEDICAL APPOINTMENTS.

To the Editors of THE LANCET.

SIRS,—I shall feel very much obliged if through the medium of THE LANCET you would answer the following questions: 1. Is it compulsory that all Poor-law medical appointments should be advertised by a board of guardians? 2. Is it legal to appoint a medical officer to a Poor-law district who resides out of the district when other eligible men reside in the district and are applicants for the same?

I am, Sirs, yours faithfully,

Oct. 19th, 1898. MEDICUS.

*** The guardians are not bound to advertise their vacancies in point of law, but when they proceed to appoint without having previously advertised the vacancy they render themselves very liable to public criticism, and if the question was raised by the Local Government Board they would have to justify their action and show that the person whom they appointed was very highly qualified for the post in every respect. As regards the second question, a district medical officer is not necessarily obliged to reside within his district though it is very desirable he should do so. In point of law the guardians are not obliged to appoint a gentleman residing within his district to the medical officership of that district, but, other things being equal, it is eminently desirable that he should do so; and if candidates residing within the district and otherwise qualified came forward the guardians would again have to satisfy the Local Government Board as to the grounds for their action to the contrary. If our correspondent thinks it worth while he might very well submit these points to the Local Government Board, with whom the confirming of such appointments rests absolutely. As a rule, however, these appointments are so poorly paid and service under the guardians is so irksome that medical men rarely find it worth while to go out of their way to secure such appointments.—ED. L.

SANITATION AND DIPHTHERIA AT TUNBRIDGE WELLS.

(FROM OUR SPECIAL COMMISSIONER.)

FOR some time there has been an exceptional prevalence of diphtheria at Tunbridge Wells. The Local Government Board complained that this matter had not received sufficient attention and finally held a local inquiry on the subject. The report giving the results of this inquiry has not yet been published. The deaths from diphtheria during the last ten years, from 1888 to 1897, were for each successive year as follows: 9, 3, 5, 4, 5, 9, 5, 9, 14, 10. In 1896 there were 67 cases of diphtheria notified, resulting in the 14 deaths mentioned above, and in 1897 no less than 117 cases of diphtheria were notified, though there were only 10 fatal cases. The fact that so many cases produced so few deaths may be in part due to the extensive use of antitoxin. The medical officer of health is always ready to supply antitoxin gratuitously for use among the poor. Considering that the population of Tunbridge Wells barely exceeds 30,000 the above figures show, not merely a high proportion, but a steady increase in the number of cases of diphtheria, which has continued during the present year, and these were the facts which led the Local Government Board to institute a special inquiry. In other respects, however, the death-rate of Tunbridge Wells is not high. The zymotic death-rate only amounted to 0·97 per 1000 in 1898, while that of the country generally was equal to 2·18 per 1000, and in 1897 it was equal to 0·95 per 1000, as opposed to 2·55 per 1000 for London and 2·15 per 1000 for England and Wales during the same period. The mean general death-rate for the ten years from 1888 to 1897 amounts to 13·7 per 1000, and amounted to 12·22 per 1000 in 1897. But if from this we deduct the deaths occurring among visitors who had resided in the borough for a period of less than three months the death-rate for last year is reduced to 11·1 per 1000. At the same time it must be borne in mind that the birth-rate is exceptionally low—namely, 20·32 per 1000 in 1897, as against 29·7 per 1000 for England and Wales. Not only are there few births, but the infant mortality is low. In 1896 the deaths of infants under one year of age was equal to 117·6 per 1000 born, while for England and Wales the proportion was 148 per 1000 born. In 1897 the figures for Tunbridge Wells amounted to only 87·8 per 1000 born, as against 156 per 1000 born in England and Wales. If judged only by these statistics it would seem that Tunbridge Wells is an exceptionally healthy place. The question, however, arises whether this low death-rate is the result of good sanitation and administration of the town or the consequence of the special character and circumstances of the inhabitants.

The medical officer of health in his annual reports has several times pointed out that at Tunbridge Wells there is an exceptionally low birth-rate, an extra complement of aged lives, an excess of invalid visitors, a very small proportion of operative workers, and a great excess of opulent people. As a matter of fact, Tunbridge Wells can hardly be considered as a town in the usual acceptation of the word. There are very few streets where the houses touch each other. It is rather a vast accumulation of villas and mansions standing in their own grounds and separated from each other by trees, gardens, and flowers. A great number of the inhabitants are thus leading country rather than town lives and they are able to supplement the abundant supply of pure air with all the ease and comforts which the possession of ample means enables them to secure. Under these circumstances the death-rate ought to be exceptionally low, and the question arises whether with a more efficient sanitary administration the death-rate might not be lower than that on record. In any case, many of the inhabitants who ought to know are far from satisfied with the present state of affairs. Nor is this dissatisfaction a mere platonic expression of opinion. It has given rise, on the contrary, to an active agitation and has brought forward fresh candidates for municipal honours, who base their principal claim for support on their determination to press forward energetic measures of sanitary reform. Strange as it may seem, considering the luxurious appearance of most of the dwellings and the large gardens with which they are surrounded, the chief complaint is that of overcrowding. The

grievance arises partly from the fact that there is no competition in the sale or leasing of land for building purposes. It nearly all belongs to three or four large land-owners who do not want to be bothered with poor tenants. They are willing enough to see villas and mansions arise on their land, but they have a strong objection to workmen's cottages. Such dwellings, they think, would depreciate the value of the surroundings, and therefore they refuse to let their land on building leases unless high-class houses are to be erected. Thus, though the working-class population is not numerous, there is a much keener demand for workmen's cottages than for middle-class villas. But anyone seeking to supply this demand would find it almost impossible to obtain the necessary land. Yet, on the other hand, if a big villa or residence is erected the tenants bring with them a coachman and they require the services of gardeners and others who do not live in the villa. Where, however, are these attendants to live? They must rent one of the few workmen's cottages that do exist, and as this necessity is most imperative they are compelled to bid against each other. Thus the rents for workmen's cottages have risen in a fabulous manner; and now it often happens that a third of a workman's earnings is absorbed merely in the payment of rent. Under these circumstances the tenants of workmen's cottages are obliged to take in lodgers so as to help them to pay the rent, and this occasions the overcrowding.

That this grievance is serious is proved by the petition which was drawn up on the subject some time ago. It was entitled "An Urgent Necessity" and was worded as follows:—

> We, the undersigned, consider that for some years the number of houses for the working classes resident in Tunbridge Wells has been and still is grievously deficient. We know from our own experience that much overcrowding has resulted, and are convinced that evils, both physical and moral, have been prevalent in consequence. We urge that efforts should at once be made to discover the best means of removing this serious danger to the physical welfare of our town and its general reputation as a health resort.

This petition was signed by thirty out of the thirty-two local medical practitioners. The two medical men who did not sign were in no way opposed to the petition, but could not testify that they had personal knowledge of the overcrowding. On the other hand, all the Poor-law guardians, all the clergy, all the ministers of Dissenting chapels, all the trade union officials and the chief house-agents without exception signed the petition. Finally, the petition was confirmed and adopted at a public meeting convoked by the mayor of the borough and held on Feb. 25th, 1897. A somewhat elaborate house-to-house inquiry was instituted in the poorer quarters. It was then shown that cottages containing only four rooms and a small lumber room were rented at 7*s.* and sometimes even 8*s.* per week. There certainly is one little lane where some weather-board cottages are rented at 4*s.* a week, but these were such wretched structures that they had to be rebuilt. To avoid, however, the submitting of plans to the town council each wall was pulled down separately and the work done was described as repairs and not as rebuilding. Where for 7*s.* 6*d.* or more a cottage with six rooms can be obtained, it will be found that, though built for one single family, it is inhabited by two or three families. Of course, there is not the necessary accommodation. The family that occupies the kitchen may be able to cook a decent meal, the other families cannot do so.

As the demand for these cottages is so keen the landlords can afford to neglect necessary repairs. If the tenants are not satisfied they can easily be replaced by others who will not be so difficult to please; therefore it is not surprising to hear that many of the cottages are in a very insanitary condition. Thus in some cases it has been found that the house drain, instead of communicating direct with the sewer, first passed under a whole row of cottages. Then these drains were so badly built that they burst and saturated the subsoil. On pressing on the thin boarding of the cottage floor the gurgling of the sewage underneath could be heard. When a case of diphtheria occurred in such a cottage the flooring was taken up and the drain was relaid. But sometimes there were other cases of diphtheria after these repairs had been effected and some people concluded from this that sanitation was of no use as a preventative for this form of disease. They forgot, however, that though the drain had been repaired the subsoil remained in a polluted condition.

It seems quite evident that sanitary matters have, at least in the past, been much neglected. The building of houses over old brick drains has been allowed and it would still be difficult to say how some parts of the town are drained. The medical officer of health, Mr. William Stamford, and the sanitary inspector, Mr. James Cave, have not failed to point out some of these defects in their official annual reports. Thus, dealing with the 14 deaths from diphtheria which occurred in 1896, Mr. Stamford says that this disease "was prevalent in the boundaries of the borough, at Rusthall and Newton, and children attending an infant school which was in a bad state of sanitation became infected. The school was at once closed, as soon as it was found to have been a source of infection." Concerning house sanitation the medical officer of health advises the town council to avail themselves of the Act of Parliament bearing upon this matter and to erect about 200 cottages for "the exclusive occupation of the respectable and provident poor." This recommendation is all well and good in its way, but there are two objections—first, that the town council did not seem at all inclined to thus run in competition against private interests; and secondly, that from the sanitary point of view it is precisely those poor who are neither provident nor respectable that require the most attention and legislative interference. Both the sanitary inspector and the medical officer of health protest against the keeping of poultry, rabbits, and sometimes even pigs, in small back yards; but it is because the people are poor that they seek to eke out their slender earnings by rearing such animals. Now one of the most evident causes of this poverty is the exorbitant rents charged. If the municipality would provide cottages at a low rent then they would have the right to stipulate that poultry, &c., should not be kept on the premises.

Concerning the 117 notified cases of diphtheria which took place in 1897 the medical officer of health states that an outbreak occurred at Rusthall and Lower Green on the boundary "which was traceable to the water-supply, derived from a spring at Lower Green, not forming part of the town supply. This spring was found to be contaminated, the dip-hole receiving a back flow from a contaminated pond. The water was examined by Dr. Stevenson and on receipt of his report water was supplied gratuitously from a standpipe and steps were taken to enforce a supply to each house from the borough mains. Notice was also posted that the water from the spring was unfit for domestic use." On the other hand, this town supply does not seem to be all that can be desired. Land has recently been purchased to establish filter-beds, and it is to be hoped that these will be placed in working order at the earliest possible date. So also has Part III. of the Housing of the Working Classes Act (1890) been recently adopted by the town council and some steps have been taken for the acquisition of land. The question is, however, whether the new town council, to be elected at the commencement of November this year, will show more energy and a genuine desire to carry out an effective scheme for the housing of the working classes. It will likewise be necessary to act with much more rigour against the owners of bad property. In his report for the year 1897 the sanitary inspector says: "Many drains which have been found defective have been repaired and reconstructed and many hundreds of defects in sanitary fittings have been attended to. Many houses, however, still remain in a condition which renders improvement necessary." Evidently what is wanted is a house-to-house inspection and the careful testing of every drain. But even when this is done it is very possible that a new drainage scheme will have to be devised, at least for some portions of the town. In his report for the year 1896 the medical officer of health says that "during the year a large number of surface sewer ventilators have been removed or closed and nearly all the open gullies have been trapped, ventilation for the sewers being provided by a ventilation shaft whenever required." But in the following year we find that still more complaints were made as to the effluvia coming from street sewer ventilators and gullies. Evidently the ventilation shafts were not placed wherever required or were not effective, for now the medical officer of health recommends that the whole subject of sewer ventilation should be submitted to, and studied by, sanitary engineers. The real fact is that in all probability the sewers in many instances are not properly laid and are not self-cleansing, and hence the constant complaints as to the escape of unpleasant effluvia. Till these defects are remedied the bad odours had better escape on a level with the streets than inside the houses or be conveyed by shafts to the neighbourhood of the bedroom

windows. A bad smell has often been described as a sanitary sentinel, and if the sewers are not properly built the inhabitants of Tunbridge Wells had better be made aware of the fact by the constant escape of bad odours in the streets.

Whether all these sanitary defects are the only cause of the increase of diphtheria it is difficult to say. Doubtless they have aggravated the evil. But there can be no denying that school attendance, though not the original cause of diphtheria, contributes largely towards its spread. Children lick their slates, put their pencils in their mouths, bite from the same apple, and instead of taking a glass put the water-tap in their mouths. Thus by means of their saliva and directly from mouth to mouth the disease can be communicated from one child to the other. It is difficult to see how this can be altogether prevented. Even adults, when duly warned, are often most careless and we cannot expect greater forethought from little children. Nevertheless, more severe regulations could be established than are at present enforced and the school teachers should watch, and reprove, or advise, the children more frequently in regard to such matters. Again, it must be confessed that the climate of Tunbridge Wells is perhaps not so favourable as is generally supposed. It has been urged that diphtheria is more prevalent in the presence of damp and there is a considerable amount of clay soil. The rocks which stand out on the common seem to indicate that the town is built on sandstone. But this is not the case. In some places there is clay to a depth of 14 ft. From the Pantiles down to the new athletic grounds the soil is practically all clay, and where there is sandstone there are indentations which retain water and this in evaporating occasions fog and dampness. As a proof of this it may be noticed that the trees outside the town are covered with lichen. The soil, in fact, alternates between sand and clay. The water does not escape easily in the subsoil; therefore it ultimately evaporates and hence there is probably more damp than is generally supposed. In the absence of careful hygrometric observation it would, of course, not be safe to dogmatise on this point, but it seems likely that there is more damp than is desirable.

On the other hand, visitors to Tunbridge Wells will be glad to hear that a system for the giving of sanitary certificates to lodging- and boarding-house keepers has now been instituted. Some time ago Mr. George Abbott, a retired medical practitioner residing in Tunbridge Wells, started an agitation in favour of such certificates. At first the town council were not inclined to take the matter in hand, and then Mr. Abbott said he would endeavour to form a private association to inspect houses and certify to the condition of their drains, &c. Finally, however, the town council yielded and themselves organised a service of this description. The sanitary certificates issued during the first year have brought in to the borough an income of £30 paid as fees for inspection and certificates. This measure will add greatly to the attractions of the town and will help to dispel whatever alarm may be caused by the cases of diphtheria which have been recorded and by the insanitary condition of certain quarters and houses.

WE have received the following communication from a resident, which is in many ways so confirmatory of our Special Commissioner's report that we think it interesting to print them next each other.

To the Editors of THE LANCET.

SIRS,—Tunbridge Wells has been visited within the past eighteen months with some pronounced outbreaks of diphtheria, confined mainly to the eastern and northern divisions of the borough, though several cases have occurred from time to time in the south and south-west, as well as at Rusthall, a neighbouring village about 1½ mile distant in a westerly direction. As is well known, the town is famed for its excellent and somewhat chalybeate water, its bracing air, and its beauty of inland scenery, while the district abounds in beds of secondary iron ore. The main water-supply of the town is derived from reservoirs, 7¾ acres in extent, situated at the village of Pembury, about 3½ miles distant, supplemented by water from bore-holes. There is a constant supply; it is, however, generally admitted that it is desirable that filtration should be carried out owing to the presence of a variable amount of harmless vegetable débris. The soil of Tunbridge Wells may, speaking broadly, be divided into two main divisions—that in which the sandstone rock predominates and that in which there is an admixture of sandstone and clay, by far the most interesting geological feature being the peculiar character of the rocks which underlie the district. The population is about 30,000, the birth-rate is 20·32 per 1000, while the corrected death-rate is 11·1 per 1000—a rate which will compare very favourably with other health resorts. The corporation have adopted several of the most salutary Acts of Parliament relating to public health questions—in particular the notification of infectious diseases; the general sanitary regulations relating to dairies, cowsheds, and trades; the housing of the working classes and public baths; and they have secured a generally efficient system of street main drainage, street lighting, watering, and sweeping. During 1897 three infectious diseases were particularly prevalent within the limits of the borough—namely, scarlet fever, 129 notified cases; diphtheria, 117 notified cases; and whooping-cough, which caused 12 deaths. The cases of scarlet fever were, on the whole, of a mild type. The cases of diphtheria centred in the main among the poorer labouring classes living overcrowded in more or less insanitary houses, affecting mostly the children attending three of the Church schools. A localised outbreak also occurred at Rusthall and Lower Green, within two miles of the borough but in part outside its boundary. This outbreak was clearly traced to the water-supply, which was derived from a spring at Lower Green and did not form a part of the borough general main supply. There was undoubted evidence of contamination of this spring, the dip-hole receiving a back flow from a contaminated pond. The prevalence of diphtheria in the borough is, by a general consensus of expert opinion, due to the day schools and, moreover, it is noteworthy that the first cases during the earlier half of this year occurred almost entirely among those children attending one or other of two parish schools in particular. The local urban sanitary authority was not at the time able to stamp out the disease completely; consequently a series of cases has been kept going by means of personal infection among the children, among the most frequent and effectual means being the cup at the street drinking-fountains, the proved fact that children suffering from the disease in question or those convalescent, though possibly still infectious, had given sweetmeats which they themselves had partially dissolved in their own mouths to other children, the constant carelessness of their parents as to the common use of feeding utensils, cups, spoons, and of all articles used to wipe discharges from the mouth and nostrils, including vessels used to receive sputa, &c. The mortality among the 117 notified cases in 1897 was 10. It is comparatively a difficult and intricate matter to prosecute a very searching inquiry into the absolute *fons et origo* of these outbreaks in the town. The water- and milk-supply generally being to all appearances above suspicion, we are naturally led to an examination of the system (or its absence) of the house-drainage among the dwellings of the poorer classes, the disease never having gained much ground among the well-to-do and usually better-housed residents. One general conclusion which may reasonably be drawn is that the drainage in many of the houses of the poor is undoubtedly defective and that in some instances there is also overcrowding, coupled with the keeping of fowls and other domestic animals in confined spaces such as unclean backyards and outhouses. The chief points to which sanitary efforts should be directed appear to be the reconstruction of a large number of house-drains, the proper fitting of both inside and outside water-closets with flushing tanks, the erection of ventilation shafts, the total abolition of all cesspools, the fitting of satisfactory manholes, soil-pipes, and approved traps, and the supply of water from the town mains to every house. As there have been frequent indications of mild cases of tonsillitis, pharyngeal catarrh, and "sore-throat" occurring in the neighbourhood of infected houses it would appear essentially important for local practitioners to "look out" for any such "doubtful cases," treating them upon prophylactic lines as if they were actual cases of diphtheria, as well as to aim at prompt and complete isolation of all first cases, the corporation having provided an isolation hospital. It would also be advisable if all cases of illness in which children have been sent home from school were visited at once, the teachers endeavouring to render every assistance to the medical officer of health of the borough as well as to the other local members of the profession.

I am, Sirs, yours faithfully,

RESIDENT.

THE BATTLE OF THE CLUBS.[1]

(FROM OUR SPECIAL COMMISSIONER.)

TUNBRIDGE WELLS.

Position of the Profession at Tunbridge Wells.—A Good Opportunity for constituting a Model Public Medical Service.—Abuse of the Friendly Societies.—Resignation of Consultants and Club Medical Officers.

MEDICAL MEN engaged in practice at Tunbridge Wells should enjoy an exceptionally fortunate position. There are comparatively few poor people in the town, but there are many invalids, and these nearly all belong to the wealthier classes. There are no large manufactories at Tunbridge Wells. The working classes of the town are for the most part connected with the building trades or work for retail shops, for some timber sawing-mills, or as gardeners, coachmen, stablemen, &c. Among the poorer sections of the community lodging-house-keepers probably form one of the most numerous classes. There is some poverty undoubtedly, but this cannot in any way be compared with the intense and widespread misery which prevails in the large manufacturing and commercial centres. Tunbridge Wells consists in the main of handsome villas and mansions and of the larger-sized type of house in which private furnished apartments are let to the numerous visitors who annually spend some weeks in this favoured locality. Under these circumstances it might have been thought that the medical practitioners of this town would not have suffered much from those economic conditions which compel medical men in other neighbourhoods to form unions for the sake of defending their material interests. As a matter of fact, however, this is not the case. The battle of the clubs has been fought at Tunbridge Wells as elsewhere, and there are also complaints of hospital abuse in that town. Certainly on investigating closely these grievances it became evident that they were not so acute or so widespread as in other and larger towns which I have visited; still, they do exist, and are sufficiently serious to justify complaints and to point to the need of organised action.

The two most important medical institutions in the town are the Provident Dispensary and the Friendly Societies' Medical Association. The former was started to relieve the pressure upon the hospital. Patients provided with a subscriber's letter of recommendation were able, according to the old rules, not only to go to the hospital, but they could request the house surgeon to visit them in their own homes. This outdoor work became too frequent and too irksome; also it was thought that the facility with which medical aid was obtained from the hospital would tend to pauperise a number of people. It was therefore decided to start a provident dispensary, to be supported by the subscriptions of the members and by voluntary donations. Thus it assumed at once the aspect of a charity and of a provident club. During the first year of its existence—namely, in 1877–78—the income consisted of donations £40, annual charitable subscriptions £83, and subscriptions to life governors' fund £137. Altogether £260 were charitably contributed. The payments made by members amounted to £410 and there were remaining on the books at the end of the year 1260 members. The contributions made by the members have greatly increased while the charitable donations and subscriptions have decreased. Thus in 1897 there were 2496 members who paid £619, while the charitable donations and subscriptions only amounted to a total of £118. The terms of payment for adults above the age of fourteen years is fixed at 1½*d.* per week and for children under fourteen years of age 1*d.* per week, but no more than three children in any one family need be paid for. Thus the maximum payment for one family is 6*d.* per week. Taking last year's figures, it would appear, however, that families with more than 3 children are the exception, for only 96 children are entered as entitled to gratuitous treatment, though the total number of members under fourteen years of age amounts to 822. The rule is that all the family must join unless any member already belongs to some other club which provides medical aid.

The question is whether the Provident Dispensary, being organised on this basis, has given rise to abuse. According to Rule 11, "any person whose average gains or wages do not exceed 35*s.* weekly may (subject to approval) be members on paying regularly and in advance their subscriptions." The wording of the rule, it will be seen, is extremely vague, for it does not state whether the wage limit applies to the joint earnings of the whole family or only to the individual member. In the latter case the limit would be far too high. Nor is there any systematic method of seeing that this rule, whatever way be its meaning, is strictly enforced. At the same time it is on record that several members have been expelled because they were too well off to belong to such a society. One of the medical officers of the dispensary assured me that he had during the course of the last year compelled several members to leave the dispensary and to call in private practitioners and pay the ordinary fee. On the other hand, when called upon to attend persons who are really poor, my informant explained that he refused to run up bills which he knew could never be paid and therefore would not attend poor patients unless they joined the dispensary. From other sources I learnt that a labouring man who had so far prospered that he was able to take a shop was urged to leave the dispensary and did so. There was another case of an assistant who, having taken a shop of his own, also left. It is true that in six months he was unsuccessful and is now working for wages once more, so perhaps he would be readmitted. In spite of these few incidents it seems that in actual practice the less said about the rules the smoother matters work and, on the other hand, the medical men of the town have no great complaint to make. It is generally recognised that there is some abuse, but it does not amount to much, and though no trouble is taken to find out such cases there is every disposition to put an end to any abuse which may be accidentally discovered. Nor can it be said that medical men attached to the dispensary are sweated or in any way exploited. On the contrary, after the payment of working expenses all the money received is divided between the six medical officers attached to the dispensary in proportion to the number of members they have on their books. Thus, last year, out of receipts amounting in all to £786 the medical officers received £447. With the balance the dispenser's salary of £91 10*s.*, the rent and taxes (£51) the drug bill (£73) and other smaller items were paid. Confinements are not included in the medical aid given by the dispensary, but it undertakes to collect weekly subscriptions of 1*s.* so as to pay the medical man attending a fee of one guinea.

The real grievance against the dispensary rests in the fact that the number of its medical officers is limited to six. This has helped to create a privileged class of practitioners and has driven others who could not join the dispensary to accept positions of a somewhat degrading description in the service of speculating insurance companies. In defence of the dispensary it may be said that it does not knowingly tolerate any abuse, that it seeks to check any touting proclivities on the part of its canvassers, and that it cannot employ more than six medical officers because there are only six working days in the week. The latter excuse is very weak. There might be more than one consulting-room, more than one medical man present at the same hour, or different medical men might attend at different hours. That some such arrangement would be practicable is proved by the fact that some time ago an effort was actually made to increase the staff. Two general practitioners having succeeded in establishing well-attended private clubs were sounded as to whether they would not join the Provident Dispensary and bring their members over with them. There is yet another grievance against the dispensary—namely, that the rule by which it is necessary to be a member for two months before receiving medical aid is not always observed. Some persons, it is said, only join when they are actually ill and pay two months' subscriptions on joining. Altogether, and to sum up, the dispensary is the least abused of the charitable institutions of the town. The reforms needed are a clearer definition and more strict application of the wage limit and the admission of all resident fully-qualified practitioners as medical officers of the dispensary if they desire to undertake that style of work. Such, in any case, were the only suggestions made to me during the course of my inquiries. For my part, however, I do not see why the medical practitioners of Tunbridge Wells should not aspire to place themselves on a level with the more progressive towns of the kingdom. The Provident Dispensary is managed by a committee of twenty

[1] A reprint of the previous articles on the above subject has been published in book form entitled, "The Battle of the Clubs," and can be obtained from THE LANCET Office, price 1*s.*

laymen and clergy. The only excuse, as far as I can see, for the existence of this committee of totally unqualified persons is that they represent the charitable donations made to the institution. These, however, amounted last year to only £118, and it seems to me it would be well worth while sacrificing this sum if by so doing the institution could be placed entirely in the hands of the profession. It would form a splendid basis for the establishment of a public medical service. After all, the best method for abolishing medical aid associations, clubs, &c., is for the profession to establish a model institution of its own open to all local practitioners and managed exclusively by the medical men themselves. Then no practitioner would have any excuse for selling his services to a speculating commercial concern; if he wanted club patients he could join the public medical service. All patients who could not pay the usual fees would have the option either of joining this institution as subscribers or of claiming relief under the Poor-law. The battle of the clubs would be terminated, for the medical clubs would cease to exist.

The next most important institution is the Tunbridge Wells Friendly Societies' Medical Association. This amalgamation of friendly societies was established in 1882. According to the published accounts this society has about 4000 members, a figure which includes 1000 juveniles. The income from subscriptions paid by these members last year amounted to £653, and the total income to £774. Out of this large sum the medical officer who is employed by this institution and is debarred from private practice received as his salary and for extras, which presumably include midwifery fees, the sum of £308 11*s.* 9*d.* A locum tenent was paid £3 3*s.* Evidently the medical officer did not enjoy a long holiday if his absence could be covered by a fee of only three guineas. Yet he must have been sadly in need of repose, for we find it on record that the number of visits paid to patients in their own houses during the course of the year amounted to 5687 and that 23,168 consultations were given at the surgery. With the exception of the little help which was obtained for the three-guinea fee all this work was done, or ought to have been done, by one single person. If all the patients were not seen by the solitary medical officer employed by this institution, then they must have been treated by an unqualified assistant, probably the dispenser of drugs. If we divide the £311 14*s.* 9*d.* paid for medical advice by the 28,855 visits and consultations given it will be seen that the medical officer received for each consultation or visit a munificent sum amounting to a fraction above 2½*d.* We have heard of shilling and even of sixpenny doctors, but here we have a 2½*d.* doctor.

Of course, if this was a work of charity there would be no reason to complain. Medical men are constantly attending the poor for nominal fees or gratuitously; but the members of this society would indignantly repudiate the idea that they were recipients of charity. Nor is there any reason for them to claim charitable help. No wage limit is imposed and many members are very well off, yet they do not scruple to pay only 4*s.* a year so as to secure the services of a fully-qualified practitioner when they are ill. Thus there is a tradesman, who sometimes employs as many as 100 men, who lives in a house for which he must pay some £60 a year, and yet he belongs to this society and is content to receive medical service at an average rate of about 2½*d.* per consultation. Another member keeps an establishment on such a large scale that the rent and taxes are estimated at £300 a year. Yet he only pays 4*s.* a year for medical attendance. That he could pay more is proved by the fact that his family do not care for the club medical man and when ill call in a private practitioner to whom they pay 5*s.* a visit. If some blunder in diagnosis or treatment should result these comparatively wealthy men will certainly only have themselves to blame. Even a fully-qualified practitioner cannot perform an impossible task and it is altogether beyond human capacity to give 28,855 careful consultations in the course of a single year. The society consists, or is supposed to consist, mainly of workmen and the workmen's ideal is an eight hours' day. But the medical officer's position, it will be seen, by the rate of pay he gets, is very inferior to that of his employers, the workmen. We will say, therefore, that he has to work ten hours a day for every day in the year, Sundays included. This makes 3650 hours in the twelve months. During that time he has to give 28,855 consultations. This means seven minutes for each consultation. But we must take into account that these consultations comprise 5687 visits paid to the patients in their own homes. If therefore from the seven minutes we deduct the time taken going from house to house—some of the houses are situated at a distance of three miles and no carriage is allowed—and if, further, we make some allowance for a partial rest on Sundays, it will be seen that barely more than a minute or two remains for ordinary consultations. As a matter of fact, the general opinion is that the medical officer did not see all these patients and did not give all these consultations, but many of them were seen by an unqualified assistant. One case was related to me concerning a member who was drawing sick pay and yet had never seen the medical officer, but only his unqualified assistant. As he did not get any better the member called in a private practitioner. The board of management took up this matter and finally paid the private practitioner's bill. Now, however, that unqualified assistants are no longer allowed it is proposed to increase the subscriptions and to employ a second medical officer to act as a qualified assistant. This is all the more necessary as the work is not limited to the care of patients. There are also medical examinations of persons who desire to join one of the amalgamated friendly societies. The medical examination is not instituted with the view of protecting the medical officer against the admission of unhealthy members. The relations of members are admitted to the medical department of the friendly societies' organisation without any medical examination, however delicate or ill they may be. It does not matter to the lay administrators of this society how much work the medical man has to do. But with regard to full members the matter is very different, because if they are ill they are entitled to draw a sick allowance, and that is why they must be medically examined and the medical man must certify that they have sound constitutions before they are admitted as full members. Thus the medical officer must do all he can to protect the society, while he is not allowed to do anything to protect himself.

Referring again to the published accounts, it will be seen that the dispenser's salary and that of his locum tenent amounted in all to £132 15*s.* 6*d.* The purchase of drugs and bottles cost £86 2*s.* 4*d.* Rent of the surgery, insurance, and taxes came to a total of £63 17*s.* 8*d.* Then there is a secretary, who draws a salary of £35, and there are fees to auditors, treasurer, &c.; total, £43 6*s.* Altogether the working expenses are put down at £675 18*s.* 11*d.*, of which the medical officer does not receive half. But the receipts are £100 in excess of this expenditure. This net profit is, of course, in the main due to the medical officer's work, yet he is allowed to have no share in the capital which he thus builds up.

Much as the commercial insurance companies may be decried the share they allow to their medical officers if honestly paid is much larger than that given by the friendly societies. The most important at Tunbridge Wells is the Liverpool Victoria Legal Company, and here it charges children as well as adults 1*d.* per week. Of this sum the insurance company only deducts 20 per cent. for its working expenses and for the collecting agents' commission. Unfortunately, the medical officer has no means of checking the list of members given him. The only way is to compare the card of the patient with the list, but then if there is an error it can only be found out when the patient is ill. This was done by one of the medical officers at Tunbridge Wells, and the errors were so obvious that in several cases they were acknowledged and the balance was paid. Whether such errors are due to the company or the company's canvasser it is difficult to say. The canvassers are constantly changed and mistakes might accidentally occur, but it would be very advantageous to put a smaller number of names on the list given to the medical man than are inscribed on the list kept by the canvasser. The chances of detection are small. If the persons whose names are omitted from the list given to the medical man do not fall ill the omission will pass unperceived. Nor is it likely that the medical officer, unless his suspicions have been aroused, will take the trouble to verify whether every patient who presents himself is on his list. But with regard to the list, such as it is, the medical officer is paid punctually and receives the full 80 per cent. of the subscriptions paid by the members inscribed on the list. It is true that he has to provide the drugs, but the working expenses are not increased by a charge for a dispenser's salary, for the rent and taxes of the dispensary and surgery, as is the case both with regard to the Provident Dispensary

and the Friendly Societies' Medical Association. On the other hand, these commercial insurance companies entirely ignore medical ethics. They canvass in all directions, pointing out the advantages of life insurance combined with medical insurance, praise their own medical men and abuse the other members of the profession. Of course, they have no notion of establishing a wage limit; and, on the contrary, prefer that their members should be well off as they are more secure in the receipt of the subscriptions. If one of their medical officers, being dissatisfied with this state of things, proposes to resign, the company will threaten to bring down a new practitioner to compete against him in his own district. There is also the Croydon and Surrey Insurance Company at Tunbridge Wells. This is very similar to the Liverpool Victoria Legal Company, but has not so many members.

Fortunately the members of the profession are commencing to make a stand against these abuses. The two consultants who were formerly attached to the Friendly Societies' Medical Association have resigned; and the question arises whether all the profession should not boycott this association and refuse to consult with its medical officer. Then, again, one of the local practitioners who had a very large number of members of the Liverpool Victoria Legal Company on his list has given them all up. This is the more remarkable as he had absolutely no complaint to make. He was paid punctually and he thought the terms of payment were on the whole fair. The greater part of his patients were exceedingly poor and it was a charity to help them. When, however, he discovered that any of his patients could afford to pay he struck them off his list and the Liverpool Victoria Legal Company did not object to this. But though he was thus able on various occasions to prevent abuse he could not prevent the canvassing. Several medical men in the town wrote to him saying that their patients had been canvassed by the agents of the company which employed him as their medical officer. He found also that his own private patients had likewise been canvassed and that patients who used to pay him the usual fees now proposed to give him only 1*d.* a week through the intermediary of the Liverpool Victoria Legal Company. At the same time he had read several articles on the "Battle of the Clubs" in THE LANCET and these helped to convince him that though personally he had no complaint to make, still the system was bad. He therefore resigned because he was anxious that there should be no stigma attached to his name. This certainly is a moral triumph. The idea that there is a stigma attached to those who sell their professional services to a speculating commercial company should be spread broadcast. This is a weapon held in the hands of the profession. Good use should be made of it.

THE PLAGUE IN VIENNA.

(BY TELEGRAPH FROM OUR OWN CORRESPONDENT.)

IN January, 1897, the Imperial Academy of Sciences of Vienna sent out a Commission to investigate the epidemic of plague in Bombay. The members of the Commission were Dr. Müller, a physician; Dr. Albrecht, an anatomist; Dr. Ghon, a bacteriologist; and Dr. Poech, physician's assistant who also has charge of the photographic department of the hospital. After a stay of three months they returned to Vienna and established a plague laboratory of their own in Professor Weichselbaum's pathological and anatomical institute in the General Hospital. Here they made pathological investigations of specimens which they had brought with them, obtained from fifty-two post-mortem examinations, observing the morphology and biology of the plague bacillus and making experiments on animals with a view to ascertaining the nature of its pathogenic action and the possibility of immunisation. On Oct. 15th a man named Barisch, who looked after the animals, suddenly fell ill with high fever and cough without expectoration. Dr. Stejskal, the assistant physician, diagnosed pneumonia, Dr. Ghon expressed his suspicion of plague, and the case was isolated in Dr. Nothnagel's clinic, where Dr. Müller and Dr. Nothnagel discountenanced the diagnosis of plague as there was no enlargement of the spleen. On Oct. 17th the patient's sputum contained blood, the microscope showed polymorphous bacilli, and a guinea-pig was inoculated with the sputum. On Oct. 18th the guinea-pig was killed, its glands were found to be enlarged, and the microscope showed plague bacilli. In the afternoon Barisch, whose symptoms included high fever and copious expectoration containing blood, became collapsed and died. A guinea-pig inoculated with blood from his heart died in two hours. Sputum collected on Oct. 17th gave plague bacilli on cultivation, as also did the glands of the guinea-pig. No post-mortem examination of Barisch was made on account of the risk of an extension of the disease, but the body was buried after Dr. Müller and two nurses had wrapped it in sheets impregnated with corrosive sublimate; they also cleansed the ward. On Oct. 20th Nurse Pecha, having fallen ill with fever, cough, and expectoration containing blood, was transferred to the Infectious Hospital under the care of Dr. Müller and the second nurse named Hochegger. Nurse Pecha's sputum contained bacilli. Dr. Müller began to feel ill. On Oct. 21st he suffered from fever accompanied by expectoration, and he found plague bacilli in his own sputum and also in Nurse Pecha's, whose temperature rose to 41° C. (105·8° F.). Dr. Poech undertook the treatment of the patients, and was treated prophylactically with Paltauf's serum, but Dr. Müller refused the serum treatment. On Oct. 22nd Dr. Müller showed typical pneumonia and he died on Oct. 23rd. As in Barisch's case no post-mortem examination was made. Nurse Pecha was suffering from continuous high fever. On Oct. 24th Dr. Marmorek arrived from Paris with a supply of Dr. Roux's serum, injections of which were given to Nurse Pecha and prophylactically to Dr. Poech and two nurses. On Oct. 25th Nurse Pecha's condition showed little change, if any, but on Oct. 26th she was described as moribund. As soon as the first case of plague was clearly recognised the Plague Commission permanently closed Professor Weichselbaum's Institute. All the animals used for experiments were killed, and the drains of the Institute were disinfected; Dr. Nothnagel's clinic was cleared and disinfected and the medical men and nurses belonging to it were isolated; the public were refused access to the General Hospital, all the medical men and the nursing staff were kept indoors, and some supposed febrile cases were transferred from the Institute and Professor Nothnagel's clinic to the Infectious Hospital. Barisch's wife and brother were also admitted to the Infectious Hospital and received prophylactic treatment. No one has been attacked with plague since Dr. Müller fell ill, and all the persons in isolation have remained free from it up to Oct. 26th, the symptoms which were regarded as doubtful being only those of sore-throat. On Oct. 26th Nurse Pecha's was the only case officially notified as plague in Vienna, though the symptoms of a companion nurse are gravely suspicious. She and those who had been in communication with her and all the suspected cases are completely isolated in the Infectious Hospital. Barisch probably received the infection by way of his respiratory organs while feeding the inoculated guinea-pigs; Dr. Müller and Nurse Pecha were obviously infected by inhaling the germs coughed up by Barisch. In all three cases the symptoms were exclusively pulmonary; glandular enlargements, which point to infection conveyed through the skin, did not occur. Infection never takes place by way of the alimentary canal. The nursing staff in the Infectious Hospital are provided with "bacteria filters" to protect them from inhaling bacteria.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Plague and Small-pox.—The Destruction of Rats.—Deaths of Medical Officers.—The Progress of the Plague.—A Plague Commission from England.

IT was recently asserted that animals which are susceptible to plague become immune if they be vaccinated with ordinary cow-pox in four different parts of the body. Whether this statement be founded on any experiments is not stated. One thing, however, is certain, that those persons who have been vaccinated have no protection from plague. There does not seem to be any antagonism between the toxins of these two diseases. There is no evidence either that those who have had small-pox are any safer against contracting plague. The idea was said to have been current in Constantinople when plague visited that city, but investigations made in the Byculla Jail at Bombay do not give it any support. There was found to be a marked similarity in the proportion of

attacks among the primarily vaccinated, amongst the re-vaccinated, and amongst those who had had small-pox.

There is reason to believe that the extermination of the rat population in a district bordering on a plague-infected area would have a preventive effect on the extension of this disease. So far the only attempt which has been made in this direction has been in the destruction of rats by the ordinary methods. It is now suggested that they should be infected with some disease. The problem, however, has been to find a specific infective disease which is pathogenic to rats but not to man. It is stated that some progress has recently been made in this direction. There is little doubt that plague primarily affects the rat and that it is through the rat that the disease spreads amongst men. Wherever an outbreak of plague has occurred amongst human beings it has almost invariably been preceded by plague among the rats. Although plague is not very infectious from one human being to another, except, perhaps, the pneumonic form, there is reason to believe that it is highly infectious among the rats. If, then, the rats could be exterminated in advance of the plague there would be great prospects of preventing the spread of the epidemic. The interval between two epidemics of plague seems to be about the time required to renew the rat population, and although the plague is very fatal and appears to kill off every rat, yet a few either survive the disease or fail to contract it, and these few soon regenerate the rat population. The conditions then become again favourable for a fresh outbreak and the cycle of disease incidence is again repeated. Some of the above facts, although repeatedly observed and recorded, have not been taken to heart by the plague authorities and regulations still continue to be issued as if an ordinary infectious disease, such as scarlet fever or measles, had to be dealt with. It is upon the basis of house contamination that the emptying or burning down of houses with the encampment of the inhabitants in the open country around has alone proved of real value.

I regret to hear that within a fortnight two of the medical officers of the Maratha Hospital in Bombay have been attacked with plague and that one has died. Neither of the officers lived in plague-infected localities, and the presumption is that they both contracted it at the hospital. The medical officers of this hospital are native practitioners. As well-ventilated, well-arranged, and well-conducted hospitals have hitherto been shown to be extraordinarily safe as regards contagion and infection of plague some inquiry should be instituted into this and some of the other native hospitals. Many of these hospitals are only converted houses and are ill adapted for the purposes in view. They are, moreover, situated in closed-in and very crowded localities.

The summary of the progress of plague during the week is not satisfactory. In the districts and states of the Bombay Presidency the reported number of plague cases rose from about 4100 to over 5000. It is said that in Dharwar the disease has become too prevalent for the staff to cope with, that corpses are being found in the outskirts of the town and fields with no one to bury them, and that they are obliged to be left as they are to decompose or to serve as food for the jackals and the vultures. The southern part of the Presidency is badly infected, the chief increase occurring in Dharwar, Belgaum, and the Satara district, and the Kolhapore State. Calcutta is apparently free and Karachi had only one death. The death-roll for Bombay city shows a terrible rise, the figures being 1002 or over 400 above the average. Probably the whole of this excess is due to plague, although the official returns give only 243 deaths from this disease.

It is understood that a Plague Commission will shortly be formed consisting of five members with a secretary. Three eminent medical men will be sent out from England.

Oct. 7th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Need of a Physical Laboratory in University College, Liverpool.

THE need of a physical laboratory in University College has been felt for a considerable time, as the accommodation provided for the department of physics has become altogether too limited owing to its rapid development. To make use of Professor Lodge's own words, "it is becoming increasingly difficult to accommodate the ordinary student and will soon be impossible." In THE LANCET of Oct. 22nd reference was made to the munificent donations of Lord Derby and Mr. Ralph Brocklebank towards the erection of new buildings to comprise the departments of anatomy, medicine, and surgery, which are so urgently required. It is much to the credit of Professor Lodge that he willingly and approvingly waived his immediate claim to a new physical laboratory, believing that the wants of the above-mentioned departments were more pressing. In a letter to the local press on the need for a local physical laboratory Professor Lodge reviews the history of his department since his appointment as the first professor of physics eighteen years ago. The terms of the letter are temperate in the extreme, although showing a condition of things which cannot be allowed to continue much longer. He says that on his appointment he was introduced to the temporary accommodation which was to serve him as a laboratory both for teaching and research and which, he was told, was to satisfy him for twenty years. Professor Lodge truly points out that physical laboratories in this country and even on the continent and in America were not then what they are now. Twenty years makes a wonderful difference in a progressive subject in the Victorian era, and the whole idea of a working student's physical laboratory is quite recent, originating in a large measure with Lord Kelvin at Glasgow, who began in a dark hole where now is the old College-street railway station. The first practical class (one of 5 students only) which Professor Lodge had was conducted in an upper room of a building formerly used as a lunatic asylum, with the apparatus mostly on the floor. Gradually, as the other professors expanded into new buildings for their respective departments, the professor says, he also expanded by occupying their discarded rooms. He would be loth to leave them now, having in a manner grown into the place, but for two serious drawbacks—viz., want of cleanliness and unhealthiness. He cannot recommend advanced students or graduates of other universities to come and do research work at University College—there is literally no room. He dilates on the material scientific advantages to be met with at Berlin, Strasburg, Zurich, Harvard, and Baltimore and at other places far poorer and smaller than Liverpool. He goes so far as to say that really advanced students, even his own, must migrate elsewhere. The pinch is felt most by the more advanced students. With an average attendance of 26 or 27 students at the present time and these likely to increase as the session goes on, and in addition a few teachers only able to come on a Saturday and a large number of evening students on Thursdays, he wonders how they all get fitted in. And then over and above this number there are 77 first-year students to be put through a beginner's course of laboratory instruction. These have to be taken in batches; they cannot be taught nor can they be examined all at once or in two sets as in Manchester. At the electro-technical department the pressure is not so severe, but it, too, has to be carefully organised. Altogether Professor Lodge makes out a good case for new laboratories, and when that desired object has been attained there will be none more worthy and more pleased to perform the opening ceremony than that distinguished man of science, Lord Kelvin, who, on parting at the railway station with his host, Professor Lodge, on the occasion of his recent visit to Liverpool, made use of words to this effect: "When they give you a new laboratory I will come and open it. Not laying foundations, that's a dreary ceremony, but the real opening." All wish Lord Kelvin health and strength to enable him to fulfil his promise to Professor Lodge.

Opening of the Albert Infirmary, Winsford: The Duke of Westminster on Vaccination.

The Duke of Westminster performed the opening ceremony of the Albert Infirmary in Winsford on October 20th. The new infirmary is the gift of Mr. W. H. Verdin, D.L., for the benefit of the inhabitants of Winsford and Middlewich, and the surrounding districts. It was formerly the mansion of the Verdin family; and is a square stone-fronted building. On the ground floor are reception rooms, nurses' rooms, and convalescent rooms, and 2 men's wards with 8 beds. On the first floor are women's and children's wards which contain 4 beds. The new infirmary will be governed in conjunction with the Victoria Infirmary at Northwich under a board of management of which Sir Joseph Verdin, Bart., is

president. The Duke of Westminster, in the course of his opening speech, said that medical and surgical science had made very considerable strides in the direction of curing and preventing disease. He hoped that public opinion would be still more educated and directed to the advantage of preventing disease, of which they had heard a great deal lately in connexion with vaccination. He would that public opinion might arrive at the conclusion that vaccination was after all a specific for one of the most loathsome diseases to which the human race was subject. The Duke also alluded to the advance which had been made in nursing during the latter part of the present reign.

Oct. 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University: Sir Thomas Grainger Stewart's Inaugural Address to the Faculty of Medicine.

THE classes in the Faculties of Arts, Medicine, and Law in the University of Edinburgh opened on Oct. 18th, for the winter session. In some instances introductory lectures were delivered by the Professors; in others the work of the class was at once taken up. In opening the class of Medicine, Sir Thomas Grainger Stewart spoke of the reciprocal duties of the profession and of the community in reference to the arrest of such diseases as small-pox and phthisis. With reference to the New Vaccination Act, Sir Thomas Grainger Stewart congratulated his hearers that in Scotland the attitude of the people towards vaccination was the sensible and scientific one, while he stigmatised the action of the Government in introducing a conscience clause as "from a medical point of view absolutely disastrous folly." With regard to phthisis he asked his hearers to grasp the conception of the very dreadful fatality which tuberculous disease was causing in these days in that the mortality from tuberculous disease in our own and most countries was such that it accounted for one in every six of the deaths which occurred. Referring to preventive measures now being gradually taken against phthisis he wished his hearers to note the suggestions, which, in his opinion, were very important. They should attend to the education of the public, and especially of infected individuals and families, in regard to the laws of the spread of tubercle. They should make everybody know that a phthisical patient was a source of danger to those round about him unless proper precautions were taken. Precautions should be taken with regard to the quality of food and especially with regard to the quality of milk. Sir Thomas Grainger Stewart also thought that there should be compulsory notification of phthisis.

Glasgow University: an Emeute.

The session has opened in a very stormy and unfortunate manner. The new principal, according to the official intimation, was to signalise his accession to office by the delivery of an address to the students in the Bute Hall, and the eventful day found gathered together not only the academic dons but also the heads of the municipality and various representatives of learned bodies to do honour to the occasion. In the usual stately fashion the Senators entered in procession the Bute Hall and the new principal ascended the rostrum. But from the commencement it was evident that a very unruly spirit for some reason or other existed in the undergraduate breast. Noises and disturbances of all kinds greeted Dr. Story's appearance, and remonstrance was vain. In the end the Principal folded up his manuscript and followed by his colleagues left the hall. It is difficult to explain, and of course impossible to justify, the behaviour of the students. During his term of office as professor Dr. Story has on more than one occasion come into acute conflict with the student world; but these are for the most part old tales and scarcely have more than the interest of tradition for the students of to-day. Such traditions, however, are not unwelcome to those who believe it is their inalienable right to "kick up a row" whenever an occasion presents itself. It is not to be accepted that the uproar was part of a preconcerted scheme, and by this time the great majority of the undergraduates regret at least the extremity to which the demonstration was pushed. It was a silly exhibition of animal spirits and bad taste, and it is to be hoped that no more serious interpretation will be attached to it. The management of a large body of young men is not an art to be mastered in a day and possibly Dr. Story may be able to add to his undoubted capacity and courage that nameless quality which wins the good temper and sympathy of sound-hearted and demonstrative youth. Some wise words have been spoken by Professor Coats, to which the Senate no less than the students may well pay heed.

Glasgow Veterinary College.

The new session was opened on Oct. 21st by Dr. Lindsay Steven, who delivered an address on the Prevention of Tuberculosis, in which he advocated combined action on the part of the medical and veterinary professions. He believed compulsory notification of tubercle in man to be at present impossible; hospital treatment of pulmonary tuberculosis was, he contended, not curative, but by the provision of sanatoria in the country for early cases and by the distribution of handbills from house to house so as to secure popular instruction much could be done to prevent the spread of the disease. The veterinary practitioners, Dr. Steven pointed out, were in a fortunate position to check the very springs of the disease, as they were able by suitable measures to prevent the distribution to human beings of contaminated food supplies.

St. Mungo's College, Glasgow.

The medical session was opened on Oct. 20th by an address delivered by Professor Maitland Ramsay, M.D. Glasg.

University of Aberdeen.

The medical classes for the present winter session opened at Marischal College on Oct. 19th, the work being commenced by nearly all the professors without introductory remarks. In opening the class of materia medica Professor Cash, however, drew attention to the British Pharmacopœia of 1898, recently issued by the General Medical Council, as a somewhat conservative volume, neither omissions nor additions being of a prominent character. The metrical system, he observed, was introduced as an alternative to the old system for compounding, but an equivalent was not given, and unfortunately the decimal method was not recommended to the prescriber even as an alternative. This serious blemish, he added, it was to be hoped, would be rectified by the compilers of the next volume. In his introductory lecture on Oct. 20th to the pathology class Professor Hamilton referred to the transformations in Marischal College, the chief new feature this year being the completion of the south wing for the accommodation of the department of physics. Having remarked that Aberdeen was now one of the best equipped medical schools Professor Hamilton addressed himself to a comprehensive survey of new medical schools in England which threatened to prove dangerous rivals to those of Scotland. The new National Philosophy buildings at Marischal College were opened by Professor Niven, who gave an interesting address on the history of the teaching of the subject in the University. The new lecturers in history, education, and German language and literature were introduced to their respective classes by Principal Sir W. D. Geddes. There were 25 passes in the medical "preliminary" on this occasion; 8 candidates took part in the medical bursary competition.

Aberdeen Hospital for Sick Children.

The extension of this building—being a home for 30 nurses—has now been completed from designs by Mr. A. Marshall Mackenzie, A.R.S.A., architect, Aberdeen. It is a granite building consisting of ground floor and three floors above and includes dining-room, sitting-room, bedrooms, and sick-room. The extension has been plainly furnished and the total cost amounts to the wonderfully small sum of about £2000. A bazaar in aid of the hospital is to be opened in the Music Hall Buildings, Aberdeen, on Friday, Oct. 28th, by Princess Henry of Battenberg (Princess Beatrice), and on Saturday, Oct. 29th, by Lord Provost Mearns, Aberdeen.

Typhoid Fever in Aberdeen.

Dr. Matthew Hay, medical officer of health of Aberdeen, reports regarding the outbreak of typhoid fever in Aberdeen in the month of September that "typhoid fever shows a very large increase, 30 cases with 3 deaths having been reported, as against 6 cases with 1 death in the preceding month. This is by far the largest number reported in a single month for several years. The excess of cases was traced, as indicated in last month's report, to an infected milk-supply."

Oct. 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Regius Professor of Medicine in Dublin University.

SIR JOHN BANKS, K.C.B., has resigned the position of Regius Professor of Medicine in the University of Dublin. Sir Francis Cruise, consulting physician to the Mater Misericordiæ Hospital, and Dr. J. M. Finny, King's Professor of Medicine in the Medical School of Trinity College, are mentioned as candidates for the office.

Sir Patrick Dun's Hospital.

The opening meeting of the session was held at Sir Patrick Dun's Hospital on Oct. 19th, when Dr. C. B. Ball, Regius Professor of Surgery in the University of Dublin, delivered an inaugural address, dealing with the advances in surgery which had taken place during the last quarter of a century.

The Royal College of Surgeons in Ireland.

The President, Vice-President, and Council of the Royal College of Surgeons in Ireland have issued invitations in connexion with the formal presentations of medals and prizes which will take place on Nov. 1st. On that occasion the students of the medical school of the college to whom such honours were awarded at the termination of last session will receive them from the President.

Irish University Education.

The Lord Lieutenant of Ireland (Earl Cadogan) paid a State visit to Belfast on Oct. 18th and laid the foundation-stone of the new city hall and opened the newly-erected electric lighting station. He was subsequently entertained at a sumptuous luncheon by the Lord Mayor (Alderman Henderson, M.A.), when, in the presence of 400 of the most influential citizens of Belfast and Ulster, he delivered an address, in response to the toast of his health, dealing among other matters with university education. His Excellency stated that for some years past he had sympathised entirely with the views of Mr. Arthur Balfour on this question. He said he could not hope to receive any enthusiastic support for that view. Mr. Balfour had stated that nothing but the education of his party could possibly bring his ideas to realisation. He (the Lord Lieutenant) said if the party could be so educated then a way might be found out of the difficulty. This remarkable and pointed reference by Lord Cadogan to the subject of a Roman Catholic university has, as might be expected, aroused a great deal of discussion and the general feeling is that the question of Irish university education is again thrown into the melting-pot. THE LANCET is not the place in which to discuss political or religious questions, but one thing is clear: if the Government decide to fcund a Roman Catholic university there is no longer any reason for the existence of the present Royal University, and where are the northern students, who constitute over 50 per cent. of those who go to the Royal University, to obtain degrees? The Lord Lieutenant did not allude to this point and it is one which the Government must fully consider in any new settlement of Irish university education. There can be no question that the present condition of Irish university education is most unsatisfactory. No one is content with it. But when it is remembered that in dealing with such a subject Mr. Gladstone shipwrecked his Government, many fear that it may form the grave of the present political party in office, unless, as some suggest, the whole question is to be taken up and an attempt made to settle it on non-party lines by representatives of both sides who do not sit on either of the front benches in the House of Commons.

Belfast Corporation.

On Oct. 19th a special meeting of the corporation in committee was engaged for a lengthened period in considering the character and contents of a new Bill which it is proposed to promote in the next session of Parliament. A great many matters considered by committees and by private members to be of sufficient importance to apply to Parliament for power to deal with were discussed, and amongst others that of the compulsory provision of water-closets in all houses at present furnished only with privies and to lend money to owners of property to assist them to carry out this object. A very influential deputation, of which Dr. W. A. McKeown was the spokesman, appeared before the council on the same date, arguing the chief objections to the continuance of the traffic through the city of traction engines and their accompanying waggons. Dr. McKeown pointed out that these objections were: excessive noise; vibration; damage to sewer- and water-pipes by the passing of the heavily-laden waggons, breaches in sewers being caused in this way and the ground being impregnated by means of the leakage with objectionable material frequently charged with germs of typhoid; the damage to property, house-walls being cracked and great difficulty being experienced in tracing the damage to the traction engines owing to the non-appearance of external signs till perhaps days after the harm had been done; and the inability to obtain satisfaction from the owners of these engines when they are known. The Lord Mayor stated that in the preliminary report submitted to the corporation concerning the new measure there were these words, "To abolish goods traction-engines travelling in the city." With this statement the deputation were quite content.

The Health of Belfast.

The death-rate of Belfast for the week ended Oct. 15th from all causes was 27·9 and from the principal zymotic diseases 7·0. The number of cases of typhoid fever notified was 149 during the same period, in the previous six weeks the numbers having beeen 157, 172, 164, 247, 170, and 271 respectively. These figures show that there is little change during the past two weeks in the number of cases of typhoid fever notified and would seem to indicate that the recent outbreak or recrudescence of the disease is passing over and that we are reaching the normal endemic condition of typhoid fever in Belfast. Dr. Lorrain Smith, who has been investigating the problem of the causation of the typhoid fever in Belfast, has reported to the Public Health Committee that since the beginning of September he had given his whole attention to the investigation of the cause of the epidemic; that in the course of the work many side questions had arisen which required solution; and that the whole problem had assumed a form which in the first instance he did not anticipate, and on this account he was not yet in a position to come to a definite conclusion, but he had confidence that the methods on which he was working would yield decisive results. A curious point, which may lead to further complications, arose at the last meeting of the Public Health Committee in reference to a letter received from the board of guardians. In this communication it is suggested that the Belfast Corporation should contribute a moiety of the cost of the cleansing of the Holywood foreshore of the decomposed seaweed impregnated with sewage matter which has accumulated there and which the guardians are having removed at a cost of about £100. Holywood is a small town situated on the right hand side of Belfast Lough, about five miles from the city, and the interesting point is that the guardians evidently believe that the pollution of the shore there is due to the fact that owing to the plan of the main drainage scheme of Belfast the sewage of that city is spread out on each side of the Lough, and so Holywood is injured. The Public Health Committee decline to fall in with the suggestion of the guardians on the ground that the sewage of Holywood itself, as well as that of the new adjacent military barracks, is, with the cognisance of the board of guardians, discharged on to the Holywood foreshore. There is no doubt that some contamination may arise in this way, but there can be no question that Belfast is the main cause of the horrible stenches which exist at times on both sides of the Lough, and which it is feared will lead to further depreciation of property unless the main drainage scheme of that city is completely reorganised, a work which will be as formidable as it will be expensive. The truth is, that the city of Belfast has completely outgrown the scheme which is at present in service for carrying away its sewage.

The Belfast Hospital for Sick Children.

At a special meeting of the governors of this hospital, held on Oct. 24th, Dr. Robert Campbell was promoted to the post of surgeon, in place of Dr. J. S. Morrow, retired, and to the office of assistant surgeon thus created Dr. Andrew Fullerton was elected by a very large majority.

The Ambulance Branch of the Belfast Fire Brigade.

During the year ended June, 1898, the most efficient ambulance service of the Belfast Fire Brigade received 1643 calls (an increase of 368 on the previous twelve months), and the department, which is worked entirely by the fire brigade

staff, responded to 1630 calls (being unable on 13 occasions to do so owing to the staff being engaged at fires), occupying 741 hours 51 minutes (being an increase of 112 hours 21 minutes from last year), showing an average of 27 minutes per journey from the receipt of the call until the carriage returned to its station. The distance travelled was 4226½ miles, or an average of 2½ miles per single journey. It is probable that when a divisional station is erected at Ardoyne a second ambulance will be placed there. This ambulance service, which is of the utmost value in a great commercial city like Belfast, is most admirably worked under the superintendence of Mr. Parker, chief of the Fire Brigade; and Deputy Commissioner Major Charles J. Trimble, L.R.C.S. Irel., who recently inspected the service on behalf of the St. John Ambulance Association, in his report stated that "so far as the general efficiency and usefulness were concerned the Belfast division is far ahead of anything I have yet seen. The members are firemen and certainly a more thoroughly efficient ambulance organisation no town or city could possess, the staff being always ready by night and by day to start at a second's notice on ambulance or transport duty." The city corporation deserves the utmost credit in having selected in Mr. Parker a chief who has completely reorganised their fire brigade and who has established an ambulance service which is now admitted to be one of the finest in the world.

Oct. 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Surgical Congress.

THIS Congress came to an end on Oct. 22nd, the last meeting being devoted to the subject of Gynæcology and an exhibition of Instruments and Apparatus. A long discussion arose upon the technique of, and indications for, the operation of total abdominal hysterectomy. Before separating the Congress arranged its organisation for next year. M. Lucas Championnière was unanimously elected Vice-President for 1899 and therefore will be President in 1900, in which year the foreign sovereigns will be received. The evening of the last day was devoted to a *soirée* at the Hôtel des Sociétés Savantes, where a demonstration was given, arranged by Dr. Doyen, of cinematograph views of various operations performed by himself, such as craniectomy, resection of the knee-joint, hysterectomy, and others. The audience was very large and the apparatus worked most successfully, as there was much more electricity available than on Oct. 17th. It was derived from 40 large accumulators supplied by Dr. Doyen on finding that the ordinary street mains did not supply sufficient energy. *A propos* of Dr. Doyen he has just published in the *Revue de Gynécologie* for Oct. 19th a very strong letter addressed to every medical man in France as an answer to one published by M. Tuffier, in which the latter described as his own personal invention the method of arresting hæmorrhage by crushing the vessels with a strong pair of forceps. Dr. Doyen maintains that this instrument is but a modification of his vasiotribe and energetically maintains his right of priority to both method and instrument, for he had made M. Tuffier acquainted with both in the course of conversation. M. Tuffier, he says, has only made one alteration in his (Dr. Doyen's) method and that for the worse—namely, that he has given up the ligature after the crushing. M. Tuffier has announced a reply to be published in the next issue of the *Revue*, which will appear in two months' time.

The Congress of Urology.

The third Congress of Urology held in France met this year from Oct. 20th to Oct. 22nd under Professor Guyon as President, who was attended by many of his pupils, and a large number of provincial specialists and surgeons who came to Paris to take part in the meetings of the Surgical Congress also attended the Congress of Urology. The chief matter for debate was the subject of vesical infection. It was opened by a report of researches by MM. Albarran, Halle, and Legrain. In reply MM. Bazy, Jules Janet, Dessus, and others spoke. M. Jules Janet proved that certain vesical infections were due to venereal disease. On the morning of Oct. 22nd the members of the Congress visited the wards set apart for genito-urinary complaints a the Necker Hospital.

The Library of the Faculty of Medicine.

The Faculty of Medicine has just taken a step which has called forth the most lively protestations from the medical men of Paris. The universities have recently acquired the right of receiving donations and legacies and of applying these to their own liking without any outside control and naturally they have taken advantage of this new privilege. The Government has, of course, reduced these new rights to as small a compass as possible and has laid down that any moneys received in future shall be devoted to the fitting up or improvement of laboratories, libraries, or buildings. The various faculties, however, can only raise money in new ways by taxing the students, a class who already pay sufficiently heavily, and the Faculty of Medicine has therefore decided that from Nov. 16th admission to the library will be no longer free, but that every reader will have to buy an annual card of admission which will cost 30 francs. This rule has met with universal disapproval. The new tax will bring in very little, for all *bonâ-fide* students whose names are entered at the Faculty will be exempt by reason of the fees they already pay to the University. The rule will, however, fall hardly upon men already in practice who frequently wish to consult the library for reference. On the other hand, as the rules state that anyone working in a university laboratory can consult the library on the recommendation of a professor it is evident that the monetary gains of the faculty will be very small in proportion to the annoyance inflicted upon the class affected. All the medical press joins in protesting against the new arrangement, and the very students, unaffected as they are by the new regulation, are organising demonstrations against it.

The Orthopædic Institute of Lille.

A scandal has just come to light in connexion with the Catholic Faculty of Lille. One of the professors, a distinguished surgeon named Guermonprez, accepted the post of director of an institution called the Orthopædic Institute, in which a priest, the Abbé Crud, treats patients without having a medical qualification. This priest, who was formerly the Curé of Sens, has carried on for a long time the trade of a bone-setter; he has been many times convicted for illegally practising medicine, and finally he fell under the condemnation of his religious superiors. He then left Sens and came to Lille, where some charitable and wealthy persons, believing that they were doing good, built a large hospital for him at Cantelen, whereby he was enabled openly to carry on his illegal medical practice. In order to protect himself from renewed convictions the Abbé managed to get a medical man to cover him, and this medical man was Professor Guermonprez. When the committee of the new hospital made use of Professor Guermonprez's name as a "draw" the Catholic Faculty of Lille publicly repudiated having anything to do with the Orthopædic Institute in a letter signed by the Dean (Dr. Desplats) and inserted in all the Lille papers. M. Guermonprez has sent in his resignation as Professor at the Faculty.

The Accounts of the Assistance Publique.

M. Napias, the director of the Assistance Publique, has just issued a balance-sheet together with a budget for 1899. The situation is far from satisfactory. The total sum at the service of the Assistance Publique, excepting a sum reserved for certain charitable institutions, is 14,588,932 francs, and this sum is entirely used up in the annual expenses of the *service*. Besides this sum the administration possesses certain *capitaux disponibles* and a reserve fund. The former sum amounted last year to 708,359 francs arising from sums paid by patients for their keep in asylums, from the sale of timber belonging to the Assistance, and from the sale of certain other articles. This sum, however, is entirely given up to the liquidation of certain expenses incurred previously. The reserve fund, which was constituted by the regulations of 1858, is provided for by taxing all the landed property of the Assistance in the sum of 10 per cent. and is intended to meet any unforeseen catastrophe, such as fire or a fall in the value of money. This sum, however, has been gradually diminished, not by fires, but by being applied to the purposes of other departments, and now only amounts to 12,527,718 francs. The new organisation for dealing with tuberculosis has absorbed 6,000,000 francs; the construction of children's hospitals, 833,400 francs; precautions against fire, 250,000 francs; surrender of certain sources of income, 900,577 francs. Moreover, the payment of the deficit standing over from 1897 will absorb 812,547 francs,

and the liquidation of a special debt owing to the Hôtel Dieu 779,341 francs. Bad debts are estimated at 231,661 francs, and finally the accounts for 1898 will probably show a deficit of 1,000,000 francs, so that the reserve fund will be still further reduced to 1,720,065 francs. This lamentable state of affairs is not improved by the fact that in the budget for 1899 the proposed payments to the medical staff are 1,213,028 francs instead of 1,151,488 francs in 1898.

Oct. 25th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Death of a Great Surgeon.

ITALIAN surgery has of late years progressed conspicuously, mainly from its adoption of the antiseptic therapeutics and the tidiness, not to say cleanliness, they imply. Formerly the mortality consequent on its intervention was out of all proportion to the skill in diagnosis and the manual dexterity it evinced. Excellent anatomists and "artists with the knife," the surgeons of Italy had too often the chagrin of seeing all their professional insight and "assured boldness" frustrated by sequelæ due to slovenliness in treatment. Thanks to "Listerism," however, all this is changed, at least in the great centres of the healing art—nowhere, indeed, more strikingly than in the clinique of Dr. Azzio Caselli, professor of operative surgery in the University of Genoa. He was a man, whether as a teacher, an operator, a consultant, or a citizen, whom Italy could ill spare; but now—such has of late been her evil fortune—he has gone to swell the list of her prematurely "lost leaders," having succumbed to a lingering and intractable disease at the early age of fifty-one years. Azzio Caselli inherited an honoured name in surgery, his great-grandfather, his grandfather, and his father having each been distinguished in the art as well as known to fame far beyond their native Reggio Emilia. There he himself was born in 1847, and thence with a view to the medical career he proceeded as a student to the University of Bologna. From that seat of learning he passed to Naples, where he became a pupil of the eminent surgeon Rizzoli, who quickly discerned in him the makings of a sound and self-reliant operator. Graduating at the age of twenty-two years he was first called to fill the post of *chirurgo primario* in the hospital at Reggio, and in that capacity laid the foundation of the esteem in which he was held in France, Germany, Austria, Hungary, and the British Isles. He created at Reggio the "Museo di Anatomia Patalogica," which even yet rewards a visit by reason of not a few of its remarkable preparations and which forms a kind of running commentary on the many brilliant operations he performed between his twenty-fifth and thirtieth year. As a teacher, moreover, he was careful to insist on "guiding principles" amid the details which, in their sheer multitude, are so apt to bewilder; and many were the ingenious and memorable generalisations of his which helped the student to a mastery of his subject in theory and in practice. In 1882 his reputation, by this time securely established, led to his appointment to the Professorship of Clinical Surgery in the University of Genoa, a post he held with increasing popularity till his death on Oct. 19th. Keeping pace with all the resources of the modern school, when, indeed, he did not contribute others of his own, he made his clinique the resort of ardent young aspirants to the surgical career from the remotest corners of the kingdom. Operations apparently hopeless seemed to turn out well in his hands, imparting the lesson so useful in these days, especially to Italians, "never to despair of the healing art." In laparotomy, in thoracic and in cerebral surgery, his results were generally as gratifying as they were encouraging and stimulating—indeed, those of Billroth, his lifelong friend, had scarcely a more inspiring effect on pupil and colleague alike. Add to this a nature finely "touched to the issues" of art and literature, a sense of citizenship which fructified in many an act of public philanthropy, a power to make and to keep friends in all ranks of life and under every variat on of circumstance, and the outside world will have some appreciation of the feeling of loss which in the week now c'osing accompanied Azzio Caselli to the grave.

Oct 21st.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In October the following candidates passed in the undermentioned subjects:—

Surgery.—F. Ede, Royal Free Hospital; L. Liebster, Vienna; W. M McLoughlin, University College Hospital; A. H. Priestley, Manchester; and W. R. Wilson, Dublin and Belfast.

Medicine.—C. G. Catterall (Section II.), Leeds and Westminster Hospital; H. Clough, Leeds; H. H. Cotman (Section II.), Aberdeen and London Hospital; H. L. Hands, Madras and Charing-cross Hospital; A. H. Priestley and S. Sugden, Manchester; and A. F. Weston (Section I.) and R. Le G. Worsley (Section II.), St. George's Hospital.

Forensic Medicine.—G. F. M. Clarke, Charing Cross Hospital; H. Clough, Leeds; P. T. Goodman, St. Thomas's Hospital; H. L. Hands, Madras and Charing Cross Hospital; P. A. Pierre, Westminster Hospital; A. H. Priestley, Manchester; and A. F. Weston, St. George's Hospital.

Midwifery.—A. G. C. Davies, Guy's Hospital; G. W. H. Edgelow, London Hospital; F. Golding-Bird, Guy's Hospital; F. S. Leech, University College Hospital; D. V. Lowndes, Westminster Hospital; R. R. Mowll, King's College Hospital; H. J. Pickering, St. Bartholomew's Hospital; P. A. Pierre, Westminster Hospital; and A. H. Priestley, Manchester.

The diploma of the Society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery:—G. F. M. Clarke, F. Ede, A. H. Priestley, and W. R. Wilson.

CAMBRIDGE UNIVERSITY.—At the examination in Sanitary Science held in October, 1898, the following candidates satisfied the examiners in both parts of the examination:—

Lewis Potter Black, Thomas Carr, John Inglis Cook, Mohan Lal Dhingra, Alexander Duncan, Herbert Edward Goulden, John Knight, Campbell Samson Marshall, John B. O'Connor, Patrick Wilkins O'Gorman, Alfred Gervase Penny, John Alfred Knowles Renshaw, Joshua James Taylor, and Joseph Henry Whitaker.

Matriculation took place on Oct. 21st, when 897 freshmen inscribed their names on the University books. Of these 19 were post-graduate students from other universities. Dr. Langley, Lecturer in Physiology, has been elected a member of the Council of the Senate in place of Principal Glazebrook, now of Liverpool. Dr. Barclay-Smith and Professor D. J. Cunningham of Dublin have been appointed Examiners in Anatomy; Dr. H. K. Anderson and Dr. Starling of Guy's Hospital, Examiners in Physiology; and Mr. Ivatt and Mr. Easterfield, Examiners in Pharmaceutical Chemistry, for the second M.B. examination.

FOREIGN UNIVERSITY INTELLIGENCE.—*Munich:* A new Dental Institute has been established, to the charge of which Dr. P. J. Berten of Würzburg has been appointed with the rank of Extraordinary Professor.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Heinrich Spöndli, formerly Professor of Midwifery in the University of Zürich, at the age of seventy-four years. He had been for many years in retirement.—Dr. A. Morrison, formerly Professor of Physiology in the University of Nashville.—Dr. K. F. Slaviansky, Professor of Clinical Gynæcology in the Military Medical School of St. Petersburg.—Dr. D. Kochs, *privat-docent* of Physiology in the University of Bonn.—Dr. Subbotin, Professor of Hygiene in the University of Kieff.

PRESENTATIONS TO MEDICAL MEN.—On Oct. 11th at the wardroom mess of H.M.S. *Cambridge*, the President presented Surgeon Leo Edward James, L.R.C.P. Lond., M.R.C.S. Eng., R.N., with a pipe and tobacco-pouch, together with a purse of money subscribed for by a large number of friends, on the occasion of his departure from the vessel.—Mr. W. G. Grace, L.R.C.P. Edin., M.R.C.S. Eng., celebrated the twenty-fifth anniversary of his wedding on Oct. 9th and received numerous presents, amongst them being a silver tea service and silver salver suitably inscribed from the professional cricketers of the Gloucestershire Cricket Club.—On Oct. 14th, in the board-room of the Great North of Scotland Railway Company's offices, on the presentation of the prizes won last session by those who attended the various ambulance classes in connexion with the railway—viz., Great North of Scotland, North British, and Caledonian and Joint Station classes—Mr. T. W. Ogilvie, M.B. Aberd., of Aberdeen, was the recipient of a set of medical volumes as a mark of appreciation of his services. The first volume bore the following inscription:—"Presented to Dr. Ogilvie, along with other 28 volumes, from the members of the

railway ambulance class, 1898, as a mark of their appreciation."—The mayor, corporation, and officials of Kingston-upon-Thames presented Dr. W. E. St. L. Finny with an electric pedestal lamp and shade on St. Luke's Day, which was also the eve of his wedding. At the same time they selected Dr. Finny as the mayor-elect for Kingston for the coming year.

THE LATE MR. LLEWELLYN COUCH.—Much sympathy is felt in Swansea for Mr. James Couch, M.R.C.S., whose son, Mr. Llewellyn Couch, was lost in the wreck of the Atlantic liner *Mohegan* on Oct. 14th. Mr. L. Couch was chief mate of the unfortunate vessel and was described by one of the survivors as undoubtedly the pluckiest man on board; it was certainly through him that so many lives were saved.

CHIPPENHAM COTTAGE HOSPITAL.—This hospital, the foundation-stone of which was laid on Nov. 3th, 1897, is now completed, and a meeting was held last week to appoint a committee of management, &c. Sir J. Dickson Poynder was chosen President, and amongst the managing committee Dr. W. T. Briscoe, Mr. M. S. Wilson, M.R.C.S. and Dr. Carter were elected as honorary members. Mr. F. K. Green, F.R.C.S. Eng., of Bath, was appointed honorary consulting surgeon.

THE LATE MR. EDWARD BARBER.—Mr. Barber of Glossop-road, Sheffield, who has just died in his sixtieth year, was a well-known practitioner in that city, and enjoyed much popularity among an extensive circle of friends. His professional education was received at the Sheffield Medical School and in London at St. Mary's Hospital. In 1874 he took the diploma of L.S.A., followed in 1877 by that of L.R.C.P. Edin. He settled in practice about twenty-five years ago in Division-street, and had been in Glossop-road since 1878. Mr. Barber was a Churchman and a prominent supporter of parochial organisations, but notwithstanding his large practice he was not connected with any medical institution beyond his membership of the Sheffield Medico-Chirurgical Society.

THE PLAGUE IN INDIA.—The plague returns for the week ending Oct. 22nd show a marked decline as regards Bombay city, the deaths reported being considerably less than in the preceding week. In the other districts of the Bombay Presidency, however, the deaths reported numbered 4700, being somewhat greater than in the preceding week, the greatest mortality being at Dharwar, Belgaum, and Satara. The disease continues to increase steadily in Bangalore city and at the military station. There is a slight increase, also, in the Madras Province, while numerous cases have been reported in Hyderabad State. One death has occurred at Karachi. Northern India is free from plague. The services of Lieutenant Chitale, I.M.S., have been lent for temporary plague duty at Belgaum.

BOOKS, ETC., RECEIVED.

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Formes Cliniques et Traitement des Myélites Syphilitiques. Par Gilles de la Tourette. 1899.

BARKER BROTHERS, Calcutta, and A. REDDICK AND CO., Furnival-street, Holborn, London.
The Medical Register and Directory of the Indian Empire. By Jas. R. Wallace, M.D., F.R.C.S. Irel. Second Edition. 1898.

BAUMMHISTER, F., Glasgow.
Die Störungen des Verdauungsapparates als Ursache und Folge anderer Erkrankungen. Von Dr. Hans Herz. 1898.
Fürsorge für Gemüthskranke. Von Dr. C. Furstner. 1898.

BELL, GEO., AND SONS, York-street, Covent-garden, London.
Domestic Hygiene, including some General Problems affecting the Public Health. By Arnold W. Williams, M.B. Edin., D.P.H. Lond. 1898. Price 1s. 6d.

CASSELL AND COMPANY, London.
On the Origin and Progress of Renal Surgery. Being the Hunterian Lectures for 1898. By Henry Morris, M.A., M.B. Lond., F.R.C.S. 1898. Price 6s.

CONSTABLE, A., AND CO., Whitehall-gardens, London.
The Surgical Anatomy of the Lymphatic Glands. By C. H. Leaf, M.B. Cantab., F.R.C.S. 1898. Price 10s. 6d. net.

OIN, OCTAVE, Paris.
Affections Chirurgicales du Tronc. Par Dr. Polaillon. 1898.
Affections Chirurgicales du Tronc. Statistique et Observations de Chirurgie Hospitalière. IV.—Tronc. 1898.

HARRISON AND SONS, St. Martin's-lane, London.
The Lettsomian Lectures on the Affections of the Urinary Apparatus in Children. Delivered before the Medical Society of London. By J. H. Morgan, M.A. Oxon., F.R.C.S. Eng. Reprint. 1898.

LONGMANS, GREEN, AND CO., Paternoster-row, London.
Health in the Nursery. By H. Ashby, M.D., F.R.C.P. 1898. Price 3s. 6d.

MACLEHOSE, JAS., AND SONS, Glasgow.
A Directory for the Dissection of the Human Body. By J. Cleland, M.D., LL.D., F.R.S., and J. Y. Mackay, M.D. Fourth Edition. 1898.
Atlas of External Diseases of the Eye. By A. M. Ramsay, M.D. Illustrated. 1898. Price 63s. net.

MACMILLAN AND CO., London.
Edward Thring, Headmaster of Uppingham School: Life, Diary, and Letters. By George R. Parkin, C.M.G. Vols. I. and II. 1898. Price 17s. net.

MURRAY, JOHN, Albemarle-street, Piccadilly, London.
The Groundwork of Science: A Study of Epistemology. By St. George Mivart, M.D., Ph.D., F.R.S. 1898. Price 6s.

OLIVER AND BOYD, Edinburgh.
Manual of Bacteriological Technique and Special Bacteriology. By Thos. Bowhill, F.R.C.V.S., F.R.P.S. Illustrated. 1899. Price 21s.

PENTLAND, YOUNG J., Edinburgh.
The Principles and Practice of Medicine. By Wm. Osler, M.D., LL.D. Edin., F.R.S., F.R.C.P. Third Edition. 1898.
Diseases of the Heart and Aorta. By Geo. A. Gibson, M.D., D.Sc., F.R.C.P. Edin. Illustrated. 1898.

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The Sanitation of Domestic Buildings. By F. Latham, C.E., and B. Latham, C.E. 1898. Price 2s. 6d. net.
Disinfection and Disinfectants. By Samuel Rideal, D.Sc. Lond. Second Edition. 1898. Price 12s. 6d.

SCIENTIFIC PRESS, Southampton-street, Strand, London.
An Atlas of Bacteriology. By C. Slater, M.A., M.B., M.R.C.S., F.C.S., and E. J. Spitta, L.R.C.P. Lond., M.R.C.S., F.R.A.S. 1898. Price 7s. 6d. net.

SCOTT, WALTER, Paternoster-square, London.
The Natural History of Digestion. By A. L. Gillespie, M.D., F.R.C.P. Ed. Illustrated. 1898. Price 6s.

SWAN SONNENSCHEIN AND CO., London.
An Elementary Text-book of Botany. By Sydney H. Vines, M.A., D.Sc., F.R.S. Illustrated. 1898. Price 9s.

THIN, JAMES, Edinburgh.
Descriptive Catalogue of the Anatomical and Pathological Specimens in the Museum of the Royal College of Surgeons of Edinburgh. By C. W. Cathcart. 1898. Price 7s. 6d.

Transverse Fracture of the Patella: by F. H. Alderson, M.D., M.R.C.S. reprint (G. T. Whitehead, Trinity-street, Halifax).—Cyclic Law: Its Influence over Man in both Health and Disease; Determining the Sex, Its Influence upon Births, Deaths, &c.: by Thos. E. Reed, M.D., Middletown, Ohio.—A Helping Hand to Mothers: by Minnie Elligott (Jas. Clarke and Co., Fleet-street, London); price 6d.—Magazines, &c., for November: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, English Illustrated Magazine, Knowledge Humanitarian, St. Peter's Magazine.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BHATTIE, J. M., M.B., C.M. Edin., has been appointed an Assistant Professor of Pathology for the University of Edinburgh.

BENNETTS, A. J., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Officer for the Infirmary, Parish of St. Mary, Lambeth.

BRETTINGHAM, C. E. S., L.F.P.S. Glasg., D.P.H. Irel., has been appointed a Medical Officer for the 3rd Sanitary District of the Yeovil Union.

BRIDGES, ERNEST CHITTENDEN, M.B., B.S. Durh., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed a Physician-in-Ordinary for the Infirmary for Consumption, Margaret-street, Cavendish-square, W.

BURGESS, A. H., M.B., Ch. Vict., M.Sc., B.Sc., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed a Second Assistant Medical Officer for the Crumpsall Workhouse of the Township of Manchester.

DE WITT, WM. H., M.B., C.M. Glasg., has been elected to the Chair of Materia Medica, St. Andrew's University.

FENWICK, S. C. C., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed a Medical Officer for the No. 10 Sanitary District of the Lambeth Union.

FULLERTON, ANDREW, M.D., B.Ch., has been appointed Honorary Assistant Surgeon to the Belfast Hospital for Sick Children, Queen-street.

GOODBODY, R. E., M.B., B.S. Dubl., has been appointed a Medical Officer for the Great Bradfield Sanitary District of the Dunmow Union.

GRAHAM, F. M., L.R.C.P., F.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the Fifth Sanitary District of the Drayton Union.

HARRIES-JONES, E., M.B., C.M. Edin., has been appointed Junior House Surgeon for the Birmingham and Midland Eye Hospital, Birmingham.

HEMMING, J. J., M.R.C.S. Eng., L.S.A. Lond., has been appointed a Medical Officer for the Margate District of the Isle of Thanet Union.

LEE, W. H., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a House Surgeon for the General Infirmary, Hereford.

LORD, C. C., L.R.C.P. Lond., M.R.C.S., has been appointed an Obstetric and Ophthalmic House Surgeon, Queen's Hospital, Birmingham.

MACKIE, F. PERCIVAL, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Junior Assistant Medical Officer for the Salop and Montgomery Asylum, near Shrewsbury.

MACLAREN, J. A., M.B., Ch.B. Vict., has been appointed Senior Assistant Medical Officer for the Crumpsall Workhouse of the Township of Manchester.

MOORE, E. COTTEW, M.B., C.M., F.R.C.S. Edin., has been appointed Resident Surgical Officer for the Birmingham and Midland Eye Hospital, Birmingham.

MORGAN, ALBERT THOMAS, M.D. Brux., L.S.A. Lond., has been appointed Medical Officer for the No. 4 Sanitary Districts by the Bristol Board of Guardians, vice W. G. Grace, retired.

MULLIGAN, J. W., M.D. Irel., has been appointed a Medical Officer for the Abersychan Central Sanitary District of the Pontypool Union.

ORR, W. J., M.B., C.M. Glasg., has been appointed a Medical Officer by the Govan Combination Hospital Board.

PARSONS, ALLAN C., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to the Victoria Hospital for Children, Chelsea.

PATHYBRIDGE, W. L., M.D., B.Sc. Lond., L.R.C.P. Lond., M.R.C.S. Eng., has been re-appointed Physicians' Assistant for the Plymouth Public Dispensary.

RUST, MONTAGUE, L.R.C.P., L.R.C.S. Edin., has been appointed a Junior Assistant House Surgeon for the Stockport Infirmary.

RYLE, R. J., M.D. Oxon., M.R.C.S. Eng., has been appointed an Honorary Assistant Surgeon for the Sussex Eye Hospital, Brighton.

SHARMAN, MARK, M.B., M.S. Glasg., M.R.C.S. Eng., D.P.H. Scotl., has been appointed Medical Officer of Health by the Rickmansworth Urban District Council.

STAPLE, JAMES DIBBLE, M.R.C.S. Eng., L.S.A. Lond., has been appointed Medical Officer for the No. 3 Sanitary District by the Bristol Board of Guardians, vice J. B. Stephenson, retired.

STUART, C., M.B., C.M. Edin., has been appointed a Medical Officer for the No. 11 Sanitary District, Allerton.

TAYLOR, F. A., M.R.C.S. Eng., has been appointed a Medical Officer for the Third Sanitary District of the Romsey Union.

THOMAS, J. LYNN, F.R.C.S. Eng., has been appointed Honorary Surgeon for the Hamadryad Hospital, Cardiff, vice Alderman Edgar Jones.

THOMPSON, HENRY E., M.B. Lond., M.R.C.S., has been appointed Senior House Surgeon for the Birmingham and Midland Eye Hospital, Birmingham.

TURNER, J. A., M.B., C.M. Edin., D.P.H. Camb., has been re-appointed a Medical Officer by the Hertford Town Council.

WEBBER, H. W., M.D., M.S. Lond., L.R.C.P. Lond., M.R.C.S. Eng., has been re-appointed Medical Officer for the Provident Department of the Plymouth Public Dispensary.

WHITEFORD, C. HAMILTON, L.R.C.P. Lond., M.R.C.S. Eng., has been re-appointed Medical Officer for the Plymouth Public Dispensary.

WILSON, A. T., M.B., B.S. Dubl., has been appointed a Medical Officer for the Inkberrow Sanitary District of the Alcester Union.

WILSON, W., M.D. Edin., has been appointed a Medical Officer for the Abersychan Northern Sanitary District of the Pontypool Union.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ALEXANDRA ORPHANAGE, Hornsey-rise, N.—Medical Officer, non-resident. Applications to Mr. A. C. P. Coote, Secretary, 73, Cheapside, E.C.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

CHARING-CROSS HOSPITAL, Strand, London. — Assistant Obstetric Physician.

COUNTY ASYLUM, Prestwich, Manchester.—Pathologist. Salary £200 per annum, with furnished apartments, board, attendance, and washing.

DURSLEY UNION.—Medical Officer and Public Vaccinator for District No. 1. Salary £115 per annum, with usual extra medical and vaccination fees. Applications to the Clerk of the Guardians, Dursley.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Unqualified Clinical Clerkships for three months.

GENERAL INFIRMARY AT LEEDS.—Resident Casualty Officer. Salary £100 a year, with board, lodging, and washing.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, London.—Resident Medical Officer for six months. Salary at the rate of £50 per annum with board, residence, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon for six months. Unmarried. Salary £20, with board and residence in the hospital. Also House Physician for six months. Salary £20, with board and residence in the hospital.

LIVERPOOL DISPENSARIES, 34, Moorfields, Liverpool.—Assistant Surgeon, unmarried. Salary £80 the first year and £90 per annum afterwards, with apartments, board, and attendance.

LONDON HOSPITAL, Whitechapel, E.—Surgeon.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and washing. Applications to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTHUMBERLAND COUNTY ASYLUM, Morpeth.—Assistant Medical Officer, unmarried. Salary £125 per annum, rising £10 yearly to £155, with board, lodging, and washing.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer and Assistant Resident Medical Officer, each for six months. Salary at the rate of £50 per annum for the senior post.

OLDHAM INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence.

PARISH OF BIRMINGHAM.—Resident Assistant Medical Officer for the Workhouse Infirmary for twelve months. Salary £100 per annum, with furnished apartments, rations (which do not include alcoholic liquors), coals, gas, washing, and attendance. Applications to the Clerk to the Guardians, Parish Offices, Edmund-street.

ROYAL EAR HOSPITAL, Frith-street, Soho, London.—House Surgeon, non-resident, for six months. Honorarium 12 guineas.

SAINT MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London.—Honorary Surgeon. Also Honorary Assistant Surgeon.

TIVERTON INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser for two years, unmarried. Salary £105 per annum, with lodgings, attendance, fire, and lights.

VICTORIA CHILDREN'S HOSPITAL, Hull.—Assistant House Surgeon (Lady). Salary £40 a year, with board, lodging, and laundry.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £150 a year, with furnished apartments, coals, and gas.

Births, Marriages, and Deaths.

BIRTHS.

BEDDOW.—On Oct. 19th, at Rectory-road, Stoke Newington, the wife of J. Beddow, M.R.C.S., of a daughter.

BREESE.—On Oct. 22nd, at Kennington-park-road, the wife of Fredk. Breese, L.D.S., of a daughter.

EVANS.—On Oct. 24th, the wife of H. Muir Evans, M.D., Kirkley, Lowestoft, of a son.

HENCHLEY.—On Oct. 21st, at the Laurels, Blagdon, R.S.O. Somerset, the wife of Albert Richard Henchley, L.R.C.S., L.R.C.P., of a daughter.

HOWITT.—On Oct. 21st, at Ebor House, Grove-park, Chiswick, the wife of George Grahamsley Howitt, M.D., of a daughter.

MCDONNELL.—At Southsea, the wife of Staff-Surgeon J. R. McDonnell, R.N., of a daughter.

PARSONS.—On Oct. 12th, at Kaiapoi, Christchurch, N.Z., the wife of H. Compton Parsons, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter. (By cable.)

ROBERTSON.—On Oct. 18th, at Hill House, Adderbury, Oxon, the wife of James S. Robertson, M.R.C.S., of a daughter, stillborn.

SHELMERDINE.—On Oct. 23rd, at Upton Lodge, Bexley-heath, the wife of Herbert Shelmerdine, M.B., C.M., M.R.C.S., of a daughter.

SLAUGHTER.—On Oct. 19th, at Brondesbury-road, Kilburn, N.W., the wife of Ernest A. Slaughter, B.A., M.D., of a son.

WIGHTWICK.—On Oct. 23rd, at Upper Brook-street, W., the wife of Fallon Percy Wightwick, M.D., of a son.

MARRIAGES.

GARFIT—LINNELL.—On Oct. 22nd, at St. Helen's Church, Tarporley, Cheshire, Chas. Corringham Garfit, M.B., Ch.B. Vict., of Kirby Muxlee, near Leicester, to Ruth Kate, third daughter of Thomas Forester Linnell, of Shaw House, Tarporley.

HUDSON—HOLME.—On Oct. 22nd, at Whaplode, Lincolnshire, John S. Hudson, M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond., of Chiswick, to Ada, second daughter of Daniel Holme, Esq., of Madeley, Staffordshire.

MOULLIN—WHITINGTON.—On Oct. 20th, at Tuxford, J. A. Mansell Moullin, M.A., M.B. Oxon, to Bertha Mary, youngest daughter of the late P. Whitington, Esq., of Tuxford.

O'CONNOR—VACOSER.—On Oct. 20th, at St. George's Church, Bloomsbury, Charles Patrick O'Connor, M.D., of The Limes, March, to Emmie Mary, only daughter of the late Edward Robert Vacoser.

PAGE—MENZIES.—On Oct. 3rd, at Holy Trinity Church, Karachi, Sind, Alfred M. Page, Staff Surgeon, Royal Navy, to Susan (Lily), youngest daughter of J. T. Menzies.

SHEPPARD—HEALEY.—On Oct. 19th, at St. Stephen's Church, Dublin, James F. Sheppard, L.R.C.S.I. and L.R.C.P.I., second son of the late Capt. Sheppard, Clifton, Shinrone, to Emmie H. Healey, elder daughter of the late John Healey, Esq., Eye, Northampton.

DEATHS.

BARBER.—On Oct. 16th, at 259, Glossop-road, Sheffield, Edward Barber, surgeon, aged 60 years.

BLAGDEN.—On Oct. 22nd, Robert Blagden, L.R.C.P. Lond., M.R.C.S. Eng., of Cambridge-road, Teddington, Middlesex, in his 74th year.

WICKSTEED.—On Oct. 19th, Mary Beatrice Wicksteed, the beloved wife of Francis W. S. Wicksteed, surgeon, of The Grove, Dulwich, and late of Weston-super-Mare, Somerset.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (1st).—London (2 P.M.), St Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (5th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (1st). — PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Dr. T. Churton: Thrombosis of the Hepatic Veins.—Dr. W. S. Lazarus-Barlow: Thrombosis of Hepatic Vein in Cirrhosis (? Syphilitic) in a Boy aged thirteen years.—Dr. H. M. Fletcher: Viscera from a Case of Congenital Syphilis.—Prof. Curnow: Acromegalic (?) Skull.—Dr. H. Walsham: Epithelial Pearls in the Tonsil.—Dr. A. C. Latham: Multiple Dermoids in the Abdomen.—Dr. Rolleston: Idiopathic Hypertrophy of the Œsophagus. Card Specimens by Dr. N. Dalton (Dextrocardia with Left Superior Vena Cava), Dr. H. M. Fletcher (Excessive Dilatation of the Left Auricle), and Dr. T. Churton.

WEDNESDAY (2nd). — OBSTETRICAL SOCIETY OF LONDON. — 8 P.M. Specimens will be shown by Mr. Doran, Mr. Butler-Smythe, and others. Papers:—Mr. B. Sutton: (1) On a Case of Tubo-abdominal Pregnancy in which a Living Fœtus was extracted by Cœliotomy after Term and the Mother's Life Preserved; (2) On some Cases of Tubal Pregnancy.

THURSDAY (3rd).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchbourne-street, Edgware-road).—8.30 P.M. Dr. S. Phillips: The Treatment of Typhoid Fever.—Mr. W. H. Battle: Cases of Intestinal Obstruction.

FRIDAY (4th).—CHARITY ORGANISATION SOCIETY (Portman Rooms, Baker-street, W.).—4.30 P.M. Dr. C. Dent: The Hospital. (Course of Lectures on Medical Relief.)

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—7.30 P.M. Council Meeting. 8 P.M. Special General Meeting. 8.15 P.M. Dr. G. Herschell: Constipation and its Modern Treatment.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith, W.).—8.30 P.M. Dr. F. J. McCann: Cases Illustrating the Difficulties in the Diagnosis of Early Tubal Pregnancy.—Dr. A. W. Addinsell: Parotitis following Ovariotomy.—Mr. R. Lake: The Treatment of Laryngeal Phthisis.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases and Specimens will be shown by Prof. Massei, Dr. D. Grant, Dr. St. C. Thomson, Dr. B. Baron, Dr. Pegler, Dr. W. Williams, Dr. Bond, Dr. Waggett, Mr. Lake, Mr. C. Symonds, Mr. De Santi, and Mr. Agar.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (31st).—LONDON POST-GRADUATE COURSE.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Mr. G. C. Wilkin: Anatomy of Ear, illustrated with lantern.

TUESDAY (1st).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30 P.M. Dr. Tooth: Spinal Cord Localisation (lantern demonstration).

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. P. Abraham: Ringworm and Favus.—Bethlem Hospital, 2 P.M., Dr. Craig: Delusional Insanity; Paranoia.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. H. Campbell: Cases of Hypochondriasis and Allied Affections.

WEDNESDAY (2nd). — LONDON POST-GRADUATE COURSE. — Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: Sources of Water.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Maguire: Anæmic Murmurs.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. L. A. Bidwell: The Application of Splints to the Upper Extremity.

THURSDAY (3rd). — LONDON POST-GRADUATE COURSE. — Central London Sick Asylum Cleveland-st., W., 5.30 P.M., Dr. P. Manson: Clinical Lecture.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Gunn: Demonstration of Ophthalmic Cases.

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

CHARING-CROSS HOSPITAL.—4 P.M. Mr. S. Boyd: Demonstration of Surgical Cases. (Post-Graduate Class.)

FRIDAY (4th).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Tuberculosis and Leprosy.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. G. L. Cheatle: The Application of Splints to the Lower Extremity.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, **AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.**

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of **THE LANCET** *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

TYPEWRITING *v.* PENMANSHIP.

WRITING in the *Journal d'Hygiène* (No. 1138, July 14th, 1898, p. 331) Dr. Moreau, of Tours, draws attention to what he qualifies as a remarkable work by Dr. Bizzorero on the advantages which typewriting possesses over the old-fashioned method of communicating ideas to paper. In the opinion of the author penmanship is fraught with danger to the writer's health in a variety of ways. To begin with, the constrained attitude he is compelled to assume favours a distorted spine, and especially scoliosis, together with venous congestion, headache, epistaxis, dyspnœa, and compression of the abdominal organs leading to constipation and dyspepsia, the latter disability being well-nigh inevitable should he sit down to write immediately after meals. The hands having to execute dissimilar work the penman cannot guide his pen without keeping his eyes glued to its point, and so his vision is bound to suffer, asthenopia being a frequent sequela owing to the straining of the accommodatory apparatus. In adults vertigo and vomiting frequently complicate the case, but in children, whose power of accommodation is greater, the complication to be feared is myopia. The use of a typewriter according to Dr. Bizzorero, is a perfect remedy for all these evils, and for the following reason. The operator sits straight, with head erect and arms at liberty. His lungs have free play, and his abdominal viscera remain uncompressed. His eyes undergo no strain, for he is not obliged to keep them fixed on a moving pen—in fact, after a little practice he can turn them away from the keys whenever he likes without interrupting his work. That distressing complaint, writers' cramp, so common among people who have to live by their pens, has no terrors for the typewriter. His occupation is an amusement to him, and without the least discomfort he can return to it immediately after eating. But it is not to the healthy alone that typewriting presents so many advantages. Numbers of people who have the misfortune to be palsied cannot use a pen, whereas they can express themselves freely, thanks to the machine; and many sufferers from conjunctivitis, iritis, or choroiditis who have been forbidden to

write after the old-fashioned style can in the same way carry on correspondence with their friends at a distance. If proof were wanting that typewriting has no injurious effect on the eyes it would be forthcoming in the fact that the blind readily become expert manipulators. Dr. Bizzorero advances rapidity in writing as a hygienic advantage, but the legitimacy of the claim is not very apparent. His contention in favour of legibility is, however, more likely to find acceptance, for in truth there are many handwritings of which the attempted deciphering cannot but be highly injurious to the health of the unfortunate persons whose sad fate it is to endeavour to interpret the hieroglyphics. Dr. Moreau observes, in conclusion, that the knell of dactylography is not likely to be heard for some time to come. Bookkeeping will no doubt long serve the cause of penmanship and what writer of *billets doux* would entrust his lucubrations to a mechanical typewriter!

DAVOS-PLATZ.

To the Editors of THE LANCET.

SIRS,—I am shortly proceeding to Davos-Platz in charge of two or three youths whose health is in some need of restoration and medical guidance. I think that perhaps the knowledge of this may prove useful to some of my brother practitioners, many of whom doubtless have cases which under medical supervision might likewise benefit from the salubrious conditions generally under which life in that more or less aseptic region is conducted. I may add that my young companions are in no sense invalids, but it has been deemed prudent as an extreme measure of safety to expose them through the coming winter months to the pure dry air and brilliant sunshine so constantly associated with this health-giving valley of the Alps.

I am, Sirs, yours faithfully,

JAS. T. JONES.

17, Mornington-crescent, Regent's-park, N.W., Oct. 12th, 1898.

MUNICIPALITIES AND THE HOUSING OF THE PEOPLE.

AT the opening of the commissions for the county and city of Dublin on Oct. 18th Mr. Justice O'Brien in addressing the city grand jury made some weighty remarks which deserve to be studied by the so-called "advanced" school of reformers. Much had been heard lately, he said, about the high mortality prevalent in Dublin and about the domestic circumstances of the humbler classes of the community who in too many instances lived under conditions incompatible with health and decency. The cause of the evil was alleged to be the character of the dwellings of the poor in the city, and the corporation had been severely blamed for permitting such a state of things to exist. He had to inform them, however, that many of those evils in their new structures were such as, with the limited powers of the corporation, they had no means of removing. The corporation were bound to exercise the functions assigned to them by law as far as possible to conduce to the sanitary state of the capital over which they presided, but their powers were limited to that function. The poverty which was prevalent in Dublin was the real and true cause of the state of things which led up to the insanitary dwellings and the high death-rate. With respect to the accommodation of the poor the corporation possessed certain powers of interference under the Sanitary Acts, but these powers must be exercised with discretion because no new houses adapted to the requirements of the humbler classes were being built, and of course poor people must live somewhere. In some towns the duty of providing the poor with suitable dwellings had been assumed by the municipal body, but with such a degree of discouragement as not to lead to the example being followed. Private enterprise would probably find that the erection of buildings suitable for the poor would be a profitable investment of money, and a great advantage would result to the city from the giving of employment to the trades connected with building. The poverty of the city was to a great extent owing to want of employment, and it was impossible not to feel that the restrictions imposed by trades' regulations contributed not a little to the difficulty of obtaining employment.

DISLOCATION OF PHALANGES BY A BLOW FROM A CRICKET-BALL.

To the Editors of THE LANCET.

SIRS,—This accident, which came under my observation lately in the cricket field, presents an interesting feature in its mode of causation. It occurred to the wicket-keeper, who wore the usual gloves, and was caused by a blow on the tip of the middle finger of the right hand. As a result there followed a complete dislocation of the second phalanx forwards on the first. It was easily reduced by forcible extension.

I am, Sirs, yours faithfully,

Coventry, Oct. 15th, 1898. RICHARDSON RICE, M.D. Dub.

*** It is not rare for a finger to be dislocated by a cricket-ball, though it is commonly displaced *backwards*. It is rare for the phalanx to be dislocated forwards.—ED. L.

DELIVERY OF THE AFTER-COMING HEAD IN CONTRACTION OF THE PELVIS.

IN the *Deutsche Medicinische Wochenschrift* of Oct. 20th Dr. Radojewski of Janowitz records 3 cases in which he extracted the after-coming head by breaking up the brain through the vertebral canal and washing away the brain substance with a current of water. In his first case, which occurred about twenty years ago, the midwife told him on his arrival that it had been a foot presentation and that she had pulled away the body from the head. He had not brought a cranioclast with him and after vainly endeavouring to extract the head with a hook he passed a uterine sound into the skull through the spinal foramen, broke up the brain, passed an elastic catheter into the skull, attached it to an enema syringe, and injected water till the brain was washed away, after which the head was easily removed with the hook. His next case was in October, 1897, when he was called to a primipara whose conjugata vera scarcely exceeded five centimetres (two inches). The presentation being transverse he turned, but the head could not be extracted by moderate traction and external pressure, and as the child was dead he divided the spinal column between the second and third dorsal vertebræ, broke up the brain partly with a catheter and partly with a wire introduced through the spinal foramen, and washed away the brain with water, after which the head was easily withdrawn. In the third case the operative part was quite similar to that in the second, except that it was impeded by the midwife having previously fractured the cervical vertebræ. As a result of this experience Dr. Radojewski has devised an instrument which is made by Messrs. Evens and Pistor of Cassel. It is called the "cerebrotome aspirator," and consists of a tube a foot long containing a spring 3½ in. long which projects more or less beyond the tube as may be required. The spring is used to break up the brain and is then withdrawn from the tube to which a syringe half full of water is attached and the brain substance is removed by alternate injection and aspiration of the water.

"AN APPEAL ON BEHALF OF THE WIDOW OF THE LATE JAMES McGREGOR LAING."

To the Editors of THE LANCET.

SIRS,—The following subscriptions have been received in addition to those already acknowledged in THE LANCET of July 9th :—

	£	s.	d.
Dr. Herbert L. Spencer ...	2	2	0
A Poor Medico, Edinburgh	0	5	0
Professor Findlay, Aberdeen	1	1	0
A Mite	0	5	0
Mr. Edward Bartlett ...	1	1	0
Dr. E. P. Scott, Brussels...	1	0	0
Postal Order, Maxwell ...	0	2	6
Mr. Edmund Owen ...	2	2	0
Mr. J. P. Gannon, Board of Trade	2	2	0
Dr. J. Power, Nailsworth	1	1	0
Dr. George Hunter, Edinburgh	1	1	0
Dr. Duka	1	1	0
Mr. T. Corbett, Droitwich	1	0	0
Dr. G. F. Grant, Motihari, India...	1	0	0

We wish to say that, in spite of many attempts to find an established business or a suitable place to begin a shop, we have hitherto not been successful and we have, in consequence, been obliged to give Mrs. Laing, to enable her to live, some £15 out of the money so kindly subscribed. Any further sums will be gratefully acknowledged. Mrs. Laing's youngest boy, John Bertram Laing, now ten years old, will make his third application in May next to be put upon the foundation of Epsom College. Help in this direction will be greatly esteemed.

We are, Sirs, yours faithfully,

J. PICKETT, M.D. St. And. (26, Colville-square, W.),
REGINALD HARTLEY, M.D. Durh. (68, Porchester-terrace, W.)

Oct. 24th, 1898.

DANGERS IN MILK IN MANCHESTER.

APROPOS of the recent investigations by Professor Delépine and Dr. Niven as to the dangers from the milk brought into Manchester the Corporation are seeking powers similar to those contained in the Glasgow Police Amendment Act in connexion with the sale of milk from diseased cows, &c. The City Council decided also to give their support to the Camberwell Vestry in getting a Bill introduced into Parliament for dealing with the mischief arising from condensed milk.

"THE POSITION OF THE ASSISTANT WITH REGARD TO FEES EARNED AT CORONERS' INQUESTS."

WE regret to find that by a slip we have said the exact contrary of our meaning in a note last week in answer to a question from a correspondent on this subject. By the context it is clear that we designed to say that these fees belong legally to the principal—as, of course, they do—but we have written that they "belong to A," and "A" was the letter used by our correspondent to designate the assistant.

"THE CLIMATE OF THE DISTRICT AROUND JOHANNESBURG."

To the Editors of THE LANCET.

SIRS,—Dr. E. Symes Thompson has been kind enough to draw my attention to an inquiry inserted in THE LANCET of Oct. 22nd by a correspondent who desired information about the suitability of the neighbourhood of Johannesburg for phthisical patients and who is anxious to avoid dust-storms. It must be understood that almost all colonial towns are extremely dusty at certain seasons, as the corporations cannot afford the expense of preventing this in dry climates. In the vicinity of Johannesburg the immense traffic and the mining operations create much dust, which is driven about by the high winds. Moreover, the grass there is not so thick as it is, for instance, along the Drakensberg in the Orange Free State. If it is merely a question of ascertaining which part of the elevate region of South Africa is best suited for phthisical patients I

should recommend the locality of Harrismith on the Natal border, in the Orange Free State. The altitudes of Johannesburg and Harrismith do not differ very much, but the latter place has a decidedly purer and more bracing atmosphere. Speaking generally, the districts along the Drakensberg range on the western side are not so dry as the country west of them, but this fact is of little consequence. My personal observations have persuaded me that very frequently too much stress is laid on the extreme dryness of a climate in combination with high temperature. The exceptional power displayed by the atmospheric conditions of the elevated region of South Africa in restoring phthisical patients to health is principally due to two factors: (1) height above the sea level, which improves the quality of the blood and gives increased vital energy; and (2) the warm, dry atmosphere, which permits the air indoors to be continually renewed. It is scarcely necessary to close bedroom windows either by day or by night, the good result being, of course, due to the continual fresh air and not to its mere warmth and dryness. A further requisite is that the atmosphere must be bracing, for if the locality is very hot in summer the vital energy is reduced; many patients lose flesh and do not easily make it up in winter. Phthisical patients in England will be glad to hear that a movement is now on foot to establish a large and well-appointed sanatorium in the Harrismith district. In my opinion, knowing the greater part of South Africa as I do, that place is the most suitable and has the most effective climate for the purpose in question.

I am, Sirs, yours faithfully,

London, Oct. 24th, 1898. HENRI, COMTE DE MARILLAC.

*** We publish the Comte de Marillac's letter, though it s from a lay pen, as it records personal experience.—ED. L.

QUACKERY AT THE CAPE AND ITS PUNISHMENT.

FREEDOM as understood over here and at the Cape differs widely. Here any ignoramus can treat patients and receive money for so doing without let or hindrance. The treatment may be something tangible, as in the case of massage houses, or it may mean nothing at all, as in the case of the "Christian Scientists." Now in democratic South Africa they will not stand this sort of thing. Only recently a labourer was charged with practising as a medical practitioner without having a licence as required by law. A gentleman who suffered from internal pains was treated by the defendant, who gave him a medicine composed of herbs and he soon got better. Witness's father gave defendant a heifer as a fee. Another patient said that defendant had treated him but he got no better. He had promised to give a heifer but as he got no better he did not pay. Eventually defendant was fined £5.

THE FOUR SQUARE HUMOURS.

To the Editors of THE LANCET.

SIRS,—For some weeks I have been endeavouring to find the meaning of a certain phrase. Your valuable little contemporary *Notes and Queries* has hitherto been unable to suggest a solution, and I venture therefore, the rather as the phrase in question has a more or less medical air, to appeal to the readers of THE LANCET. It occurs in a legend scratched, with a diamond apparently, on a small window-pane once in use in a very old Shropshire house, and still carefully preserved. I need not trouble you with the whole of it, but I may say that it concludes with the words: "Whom God long preserved in the premisses and from the four square humors." It is as to the significance of the last three words that I seek information. The "four humours" of the classical physicians one is, of course, familiar with, but how could a man speak of being "preserved" from all four? He must, one would think, have had at any rate one. And why square? The date, 1690, is likewise inscribed on the pane. Can the "four square humors" by any chance have been a medical colloquialism or provincialism two centuries ago? I can find no trace in any dictionary. It has struck me that some medical man living in the Midlands may possibly have heard of the phrase as once current, and if he has I shall be grateful if he will say so, and at the same time hazard a solution.

I am, Sirs, yours faithfully,

United University Club, Oct. 26th, 1898. ARTHUR GAYE.

THE USE OF THE CRUET IN FIRST AID.

A CORRESPONDENT asks us for the title of a book by one of the staff of St. Mary's Hospital containing directions for the use of the cruet in first aid. Can any of our readers supply the information?

"BARKOO ROT."

To the Editors of THE LANCET.

SIRS,—I have just noticed in THE LANCET of Oct. 8th an inquiry as to the nature of Barkoo rot it should be Barcoo rot, named from the Barcoo district in Queensland, where it is very prevalent), and as I spent three years in that district and saw a great deal of it I beg to submit the following information. I saw it among all classes of men who do rough work in the bush. It is chiefly seen on the hands, as these are especially exposed to injury. The slightest abrasion of the skin may start it. The essential feature is that these abrasions show no disposition to heal for some reason. They suppurate, involving areas much larger than the original focus, and this condition may last for weeks and months. Out there it is looked upon as having a constitutional origin and the antidote which I have seen adopted and do good is tinctura ferri perchloridi taken internally—an empirical remedy; but its effects justify its use. It does not seem to be especially prevalent among men following any special occupation or using special implements, and I can offer no theory as to its pathology. It reminds one of an obstinate cocci infection, but local applications seem to have no effect on it. To put it popularly, the hands seem to get sodden with the constant sweating and the skin becomes so devitalised that the slightest injury causes an abrasion and starts the unhealthy process of ulceration and suppuration.

I am, Sirs, yours faithfully,

EUSTACE BARTON, M.R.C.S. Eng.

Cromwell-road, S.W., Oct. 22nd, 1898.

CURRY FROM A FRENCH POINT OF VIEW.

WE learn from a French journal devoted to hygiene that *le karik* is a very popular condiment in Hindustan and that it has made its way throughout the entire Orient. The natives of these regions value it highly as a powerful aperitive, and also employ it freely in the treatment of a multitude of maladies inclusive of anorexia, atony of the digestive tract, gastric and intestinal dyspepsia, muscular weakness, organic wasting, and climatic debility. When well prepared *karik* stimulates the appetite to a wonderful extent. It consists of morsels of chicken ("the muscular parts" be it noted, not the bones or feathers), together with a *sauce piquante* composed of pepper, ginger, canella, cachumba, and sundry other plants having aromatic qualities, the whole being spread abundantly over very white rice and served up piping hot.

Enquirer.—The condition is an exceedingly common one and its symptoms are always attributed by the victims to impossible telepathic influences. It is not "a clear case of insanity," but the sufferer has lost his mental balance, as his medical man has indicated to him, and we advise him to place himself under proper directions.

A Constant Reader is recommended to apply to Mr. Walter Reeve, 38, Manchester-street, W., who will be able to give him the information he requires. We have not attempted to give a list of the books particularly required for any examination.

Manor Park.—The address of the Irish Medical Schools' and Graduates Association is 11, Chandos-street, W., and that of the honorary secretary, whose name is Mr. James Stewart, F.R.C.P. Edin., is Dunmurry, Sneyd-park, Clifton, Gloucestershire.

Plague.—We are not aware that the Government require further assistance, but application should be made to the India Office and the Colonial Office.

Books.—The best pamphlet on the subject is the well-known one by Dr. J. C. McVail entitled "Vaccination Vindicated."

Mr. E. H. Snell.—We have made the correction. The fees, of course, belong legally to the principal.

M.B., R.N. has omitted to give his name and address.

Disgusted.— he matter will r iv our attention.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 27th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Oct. 21	29·59	S.W.	0·31	74	66	50	58	58	Raining
,, 22	29·90	S.W.	0·03	74	65	57	60	63	Cloudy
,, 23	30·11	S.W.	0·04	88	65	54	56	57	Fine
,, 24	30·09	W.	0·02	97	64	53	53	55	Cloudy
,, 25	30·02	S.W.	...	78	60	48	50	52	Cloudy
,, 26	30·03	S.W.	...	70	63	52	55	57	Cloudy
,, 27	30·02	W.	...	72	61	55	55	56	Cloudy

During the week marked copies of the following newspapers have been received: *Warwick Advertiser, Glasgow Herald, Manchester Guardian, Dundee Advertiser, Scotsman, Doncaster Chronicle, Wigan Examiner, Sheffield Telegraph, Leicester Post, Architect, Times of India, Pioneer Mail, Leamington News, East Riding Telegraph, Hereford Times, Sussex Daily News, Birmingham Gazette, Ilfracombe Gazette, Southern Times, Garston Reporter, Walsall Free Press, Derby Times, Builder, Liverpool Daily Post, Leeds Mercury, Essex County Standard, Western Press, Citizen, Evesham Journal, Yorkshire Post, Brighton Gazette, Bristol Mercury, Western Mail, The Joint Stock Companies' Journal, Sanitary Record, Mining Journal, Local Government Chronicle, City Press, Reading Mercury, Local Government Journal, Lincolnshire Chronicle, Hertfordshire Mercury, Surrey Advertiser, Launceston Examiner, Weekly Free Press and Aberdeen Herald, St. Mary's Hospital Gazette, Woolwich Gazette, Tenby and County News, St. Helens Examiner, Lisburn Standard, Clacton Gazette, Eastern Morning News, Guernsey Star, Leominster Chronicle, Catholic Times, Llanelly and County Guardian, Chichester Observer, Burton Guardian, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Dr. B. Anningson, Cambridge; Dr. F. H. Alderson, Lond.; Messrs. Allen and Hanburys, Lond.; Messrs. Aston and Co., Lond.; Dr. H. Armstrong, Liverpool; A. V. W.; Messrs. S. Austin and Sons, Hertford; Colonel Auchinleck, Lond.

B.—Sir W. H. Broadbent, Lond.; Dr. Beverley, Norwich; Surgeon A. O. Bobardt, H.M.S. *Dart*, Sydney; Senhor A. Borges de Souza, Paris; Mrs. F. Browne, Littlehampton; Mr. S. R. Bha, Karachi; Messrs. Burgoyne, Burbidges, and Co., Lond.; Mr. W. Buchanan, Lond.; Messrs. Burroughs, Wellcome and Co., Lond.; Messrs. C. Barker and Sons, Lond.; Mr. C. Birchall, Liverpool; Birmingham, &c., Training Institute for Nurses, Hon. Secretary of; Mr. A. E. Barker, Lond.

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I.—International News Co., Lond.

J.—Dr. W. R. Jack, Glasgow; J. K. J.; Messrs. Jones Bros., Clifton; Jewel Pen Co., Lond.

K.—Dr. H. R. Kenwood, Lond.

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U.—University College of South Wales, Dean of; Mr. J. Unsworth, St. Helens.

V.—Messrs. Voigt and Co., Lond.; Victoria Hospital for Sick Children, Hull.

W.—Dr. C. P. White, Leeds; Dr. Waterhouse, Rotherham; Messrs. Williams, Humbert, and Co., Lond.; Mr. A. H. Wake, Lond.; Miss A. L. Woodward, Lond.; Mr. S. Wand, Leicester; Messrs. Willing, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Association for Pure Vaccine Lymph, Lond., Secretary of; Mr. J. R. Askew, Washington, co. Durham; Alpha, Leeds; A. F.; Alpha, Birmingham; Anderson's College Medical School, Glasgow, Secretary of; Ashwood House, Kingswinford, Secretary of; Mr. H. Appleton, The Lizard; A. T. H.

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C.—Mr. W. Cook, Alcester; Mr. E. M. Corner, Lond.; Messrs. Curtis and Co., Lond.; Messrs. Callard and Co., Lond.; Messrs. E. Cook and Co., Lond.; C. B.; Professor W. H. Corfield, Lond.; Messrs. Cassell and Co., Lond.; Class Rooms, Edinburgh; Dr. Collier, Saxmundham; Croydon General Hospital, Secretary of; Messrs. Curry and Paxton, Lond.; Mr. J. Carter, Lond.; C. G. H.

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T.—Mr. R. D. Thomas, Welshpool; The Hall, Thundersley; Mr. J. Thin, Edinburgh; Mrs. Thompson, Lond.

U.—University of Durham College of Medicine, Newcastle-on-Tyne, Secretary of; Union Assurance Society, Lond.

W.—Mr. E. S. Warburton, Treherbert; W. P. M.; Weybridge Furnishing Co.; West Kent General Hospital, Maidstone, Secretary of; W. J. S.; W. L.; Dr. B. Weatherly, Bath; Dr. P. W. Williams, Clifton; Messrs. J. Wright and Co., Bristol; Dr. J. W. Watterson, Morecombe; W. T. M.; Messrs. Watkins and Osmund, Lond.

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